

CAN ERANCISCO HISTORY ROUW





SAN FRANCISCO PUBLIC LIBRARY

SAN FRANCISCO PUBLIC LIBRARY

3 1223 04847 8904

REFERENCE BOOK

Not to be taken from the Library







PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. ANDERSON
HENRY E. BOTHIN
JOHN A. BRITTON
W. H. CROCKER
F. G. DRUM

JOH	IN	S. DRUM
F. '	Т.	Elsey
D.	H.	FOOTE
W.	G.	Henshaw
Α.	F.	HOCKENBEAMER

NORMAN B. LIVERM	ORE
JOHN D. McKee	
JOHN A. McCandle	ess
C. O. G. MILLER	
GEORGE K. WEEKS	

OFFICERS

F. G. DRUM																		President
JOHN A. BRITTON																		Vice-President and General Manager
A. F. HOCKENBEAMER						٠							٠	•				Second Vice-President and Treasurer
D. H. FOOTB	٠			٠			٠	•	٠		٠	٠	٠	٠	•	•	٠	Secretary and Assistant Treasurer
Jos. C. LOVE	٠	٠	•	٠	•	•	٠	٠		٠	٠	٠	٠	٠	٠	•	٠	Assistant Treasurer
CHAS. L. BARRETT	•		٠	٠		٠	٠	٠		•	•		٠	٠	٠	•		Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM						٠					Consulting Engineer
W. B. Bosley.											Attorney
R. J. CANTRELL											Property Agent
J. P. Coghlan											Manager Claims Department
C. P. CUTTEN .											. Attorney, Rate Department
K. I. DAZEY											. Manager of Collections
P. M. Downing			٠					C	hi	et	Engineer Electric Department
E. B. Henley											Manager Land Department
JNO. H. HUNT											Purchasing Agent
J. P. Jollyman										Ę	ngineer Electrical Construction
E. C. Jones										C	hief Engineer Gas Department
F. S. MYRTLE .]	Manager Publicity Department
L. H. Newbert									M	[aː	nager Commercial Department
R. R. Reidford											Acting Auditor
GEO. C. ROBB.											. Superintendent of Supplies
											Valuation Engineer

DISTRICT MANAGERS

DISTRICT	HEADOUARTERS	MANAGER
	Oakland	A LEACH ID
	. Chico H	
	. Colgate	
	Martinez	
	De Sabla	
	Colfax	
	Electra	
	Fresno	
MARIN	San Rafael	W. H. Foster
MARYSVILLE	Marysville	E. C. Johnson
NAPA	Napa	. C. D. CLARK
	Nevada City	
	Petaluma	
	. East Auburn	
	. Redwood City E	
	. Sacramento	
	. San Francisco	
	. Stockton	
	San Jose	
	Santa Rosa	
	Dixon	
	. Newman W.	
	Vallejo	
Yolo	Woodland	. J. W. Coons

Pacific Service Magazine

Volume X



Number 1

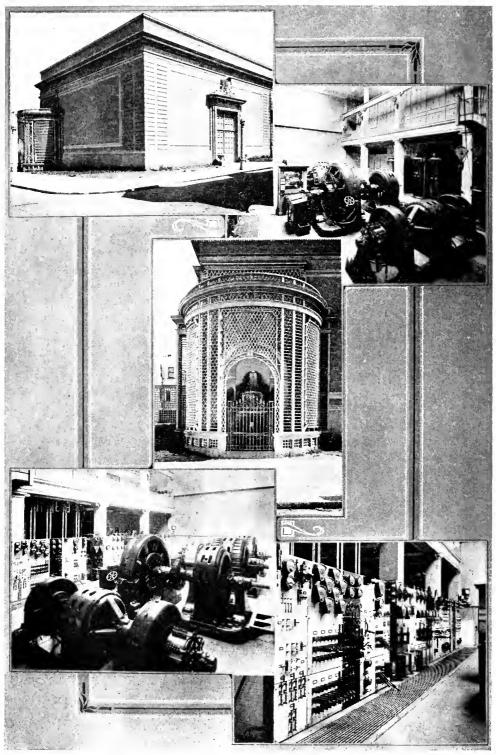
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for June, 1918

VIEWS OF SUBSTATION "E," SAN FRANCISCO					Fr	ont	ispi	ece
OUR NEW ELECTRIC SUBSTATION IN THE SAN FRANCISCO DISTRICT	I.	C	Ste	ele				3
"DAYLIGHT SAVING" AND ITS EFFECT ON "PACIFIC SERVICE"	F.	<i>C</i> .	Pi	att				7
CO-OPERATION TO BE THE WATCHWORD OF THE ELECTRIC INDUSTRY IN CALIFORNIA	F	. S.	М.					10
MEMBERS OF THE P. C. G. A. MEET IN SAN FRANCISCO	F	. S.	М.					12
"PACIFIC SERVICE" TO DRAW POWER FROM THE EXTREME NORTHERN LIMITS OF THE STATE								13
THE RAILROAD COMMISSION APPOINTS A POWER ADMINISTRATOR FOR NORTHERN CALIFORNIA							• •	13
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION								14
THE SHOWING MADE BY "PACIFIC SERVICE IN THE GREAT RED CROSS PARADE							. 20	-21
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A	.F	. <i>H</i>	ock	en	bec	ımer	22
EDITORIAL								24
TIDINGS FROM TERRITORIAL DISTRICTS.								26
"PACIFIC SERVICE" ROLL OF HONOR								30

Index to Advertisers

Allis-Chalmers Mfg. Co	iii	Pacific Meter Co	ν
Ams-Chaimers Mig. Co			
Basford, H. R	Υi	Pelton Water Wheel Co	1 4
		Sprague Meter Co	v
Chaplin-Fulton Mfg. Co	v		•
		Standard Underground Cable Co	v
General Electric Co			•••
General Gas Light Co	iii	Steiger & Kerr Stove & Foundry Co	u
General Gas Light Co			vi
Graham, Jas., Mfg. Co	17	Welsbach Company	
Granain, Jas., Mig. Go.		Westinghouse Electric & Mfg. Co	vii
National City Company 4th page co	ver		
The same of the sa	373	Wood, R. D., & Co	ti
Pacific Telephone and Telegraph Co	V 2	Wood, It. D., & Go	



Views of "Pacific Service" Substation "E," recently constructed at Nineteenth Street and Lexington Avenue, San Francisco. Attention is called to the center view, showing fountain that is part of the station's transformer-cooling system.

PACIFIC SERVICE MAGAZINE

Volume X

JUNE, 1918

Number 1

Our New Electric Substation "E" San Francisco District

By I. C. STEELE, Electric Department

THE men of "Pacific Service," generally, are aware by this time that one more modern substation has recently been added to our company's electric generating and distributing system in the San Francisco District. The purpose of the following description of this struc-

ture, with accompanying illustrations, is to give those who are not entirely familiar with the work a comprehensive idea of its up-to-date-features.

The new substation, "E," is situated on the southeast corner of Nineteenth Street and Lexington Avenue, in the Mission section of our western metropolis. It takes the place of the old station "E," which was located at Vermont and Mariposa streets. The necessity for its construction arose, mainly, from recent

developments in transportation facilities which have opened up new residence districts, notably in the section reached by the Twin Peaks tunnel. There is, also, some history connected with the spread of electric service in San Francisco which, as it takes in an important period in that city's history, may be worth relating at this time.

It goes back to 1901, when the old Standard Electric Company completed its 60,000-volt transmission line from Electra, in Amador County, into San

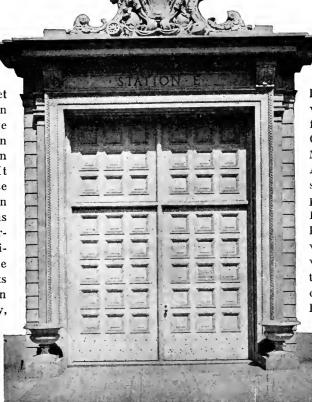
> power plant had not been completed, but the power was supplied from Colgate, via Oakland and Mission San Jose. A receiving substation was completed in San Francisco, at 34 Kansas Street, whence power was supplied to the San Francisco Gas and Electric Com-

Francisco.

At that time

the Electra

pany for distribution to its consumers. Four years later, in 1905, the Standard



The design of the main entrance to Substation "E" is typical of "Pacific Service" architecture.

Electric Company's system, which, in the meantime, had been absorbed by the California Gas and Electric Corporation, was brought into requisition to supply power to the United Railroads of San Francisco for the operation of the local street-car system. To enable the San Francisco Gas and Electric Company to carry out its contract with the United Railroads, Martin Station was constructed in Visitacion Valley, just outside the city limits, and the Standard line coming up the peninsula was swung around to the east side of San Bruno mountain to connect with this station, while a second 60,000-volt line was constructed between Martin and Mission San Jose,

The Kansas Street substation was supplied with power at 11,000 volts from Martin.

Early in 1906 the Pacific Gas and Electric Company was formed by the combination of the San Francisco Gas and Electric Company with the California Gas and Electric Corporation. afterward came the terrible catastrophe of April 18th, and the Kansas Street substation suffered severe damage, most of the front wall falling in and the electrical equipment being injured. Conditions, of course, returned to normal after awhile and during the reconstruction period business was resumed, generally, but the Kansas Street station was never rebuilt. The combine of local and outside power concerns called for considerable extensions of service facilities, among which were included a switching station to connect the 11,000-volt lines from Martin with the 11,000-volt lines feeding the downtown substations from steam station "A", at the Potrero, and a substation to better feed the district around Kansas Street. The result was the construction of a new substation at Vermont and Mariposa streets, where the several 11,000-volt lines intersected. The substation, known as Station "E," was constructed in 1906 and the Kansas Street site was abandoned.

Developments of more recent years

called for still further extensions of power service. Our company was called upon to supply power to the Ocean Shore Railroad, later to the Municipal Railways of San Francisco, and when the completion of the Twin Peaks tunnel opened up new territory there came the problem of supplying direct current for the operation of the municipal street railroad system through this tunnel. Old Station "E" was the best situated of the existing substations for this purpose, but it was a little too remote and, besides, could not conveniently be extended to take in the necessary additional apparatus. Also, the trend of general development in the district served by "E" had been such that by the beginning of 1917 the station stood in one corner of the district it served instead of, as is most desirable, occupying a central position.

These considerations, together with the realization that under the conditions now obtaining the switching of the 11,000-volt lines could be more advantageously done at Station "A" than at Station "E" led to the decision to construct the new Station "E" upon a site obtained at Nineteenth Street and Lexington Avenue, a thoroughfare running between Valencia and Mission streets, from which the company could better serve the particular district concerned, also the Twin Peaks tunnel.

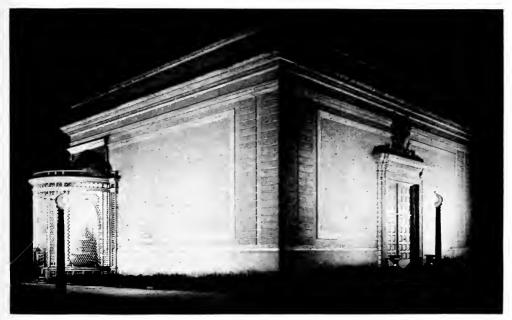
The result is shown today in an imposing, thoroughly up-to-date edifice of which our company may well be proud. It is of the same characteristic type that has been followed in all power construction work throughout the system in recent years and which has come to be known and recognized as the "Pacific Service" type.

The building is a Class A steel-frame and reinforced-concrete structure, with walls built of hollow tile. Its present dimensions are eighty-five feet in width by sixty-four feet in length, but the design permits of future extension on the Nineteenth Street front, and the ultimate structure will be 110 feet 8 inches long.

The exterior has been treated in manner quite similar to Station "K", which has already been described in Pacific Service Magazine. The walls, which are without openings other than the front and rear entrance doors, are finished in plaster, the moulded members having a smooth trowelled surface, in contrast with the main body, which was effected by the scraping method which produces an appearance rough in texture and similar to stone. The plaster is a light buff, similar to limestone, and a surface is pro-

light from above, and the display is intensified by submerged electric lights which illuminate the lower portions of the bowls and lower pool. The attention of our readers is called to the accompanying illustration.

The main entrance doors on Lexington Avenue are seven and one-quarter inches thick, built with an air-cushion in the center and deadening felt between the separate layers of wood. The doors are very large and heavy and are hung by special steel hinges to steel jambs.



The system of flood-lighting adopted by "Pacific Service" serves to illuminate the substations by night with striking effect.

duced which is exceedingly pleasing to the eye and not at all glaring.

The two street elevations are flood lighted from six cement posts near the curb line. An exterior feature of spectacular attractiveness is a fountain, built out from the Nineteenth Street wall of the building, which is part of the station's transformer-cooling system. This fountain feature is specially illuminated by a spot light, while the lattice work surrounding it receives light from the electroliers; the fountain bowls and water are played upon by a second spot-

The interior of the building is according to the most modern ideas of arrangement. A metal lath and plaster wall was put in several inches from the exterior walls of the building to provide an aircushion and, also, space for conduits and pipes to be installed. New Station "E" receives power at 11,000 volts, 3-phase, from Station "A", or from the high-voltage transmission system of the company through Station "A" or Martin station, over three cables. The equipment of the station is designed to modify this power and send it out in the forms most con-

veniently usable in the district served by the station.

Two banks of transformers, one of 3000-k.w. capacity, the other of 1500-k.w. capacity, reduce the pressure to 2400 volts and change to 2-phase, and supply the four separate circuits which furnish power for lighting and for general use. Each phase of each of the four circuits has a separate automatic voltage regulator.

Four arc tubes supply the special form of power used for electric street lighting.

Two 1000-k.w. motor generator sets convert to 600 volts direct current for the service to the Municipal Railways and the Ocean Shore Railroad.

One 250-k. w. motor generator balancer set and one 400-k. w. motor generator set supply the 125-volt and 250-volt direct current service which is the form best suited for certain special applications. Both of these units, being relatively small, take power from the transformer banks at 2400 volts.

The switching equipment for the control of the apparatus and the incoming and outgoing circuits is of the latest and best type. The switchboard contains twenty-four panels. From it are controlled all of the circuits and apparatus which make up the equipment of the station. Provision has been made for considerable additional equipment which will be installed as the growth of the load demands. The general arrangement of the station is such that the building may be conveniently extended whenever the load exceeds the capacity of the apparatus which can be placed in the present structure.

The interior is illuminated by means of six combination X-Ray and gas arc mantle fixtures designed to fit in with the general scheme of architecture. Each fixture has a 500-watt nitrogen lamp placed in a bowl reflector, which constitutes the indirect electric lighting system, and, in addition, it has three gas arc lights constituting the direct gas lighting system.

The writer's attention was called to an article in a recent publication, showing photographs of a new compressor station built for a Northern gas company, together with a description of the same. It is interesting to know that a type of building was adopted very similar in appearances to that which has been developed and adopted by "Pacific Service" and, also, that the flood lighting scheme was used, except by the use of gas instead of electricity.

The interior of the building is plastered, and painted in soft tones of buff, this above a glazed tile wainscot extending 4 feet 6 inches above the main floor line. The panelled effect and the treatment around the main entrance are very pleasing. The floor is finished with a topping of magnesite composition. This type of floor finish was adopted in preference to cement or tile on account of its being more elastic, practically free from "dusting" and because of its low cost in comparison to tile. It is laid off in small squares and is dark red in color, thus having an appearance very similar to tile. A flint tile landing with an attractive border was laid just inside the main entrance.

The entire substation and its equipment were designed by the company's engineers. Also, the company employed none but its own workmen in erecting the building and installing the apparatus. So that, from start to finish, it was a "Pacific Service" job.



"Daylight Saving" and its Effect on "Pacific Service"

By F. C. PIATT, Valuation Department

Most of us in the big family of "Pacific Service" have greatly enjoyed the changed conditions existing since "Daylight Saving" time went into effect. Some have found more time after dinner to raise fine cabbages, or, perchance, hoe potatoes in their "war gardens," while others who are golf or tennis fans may now put in many an additional pleasant hour at their favorite sport.

When, however, we consider the effect of "Daylight Saving" on the business operations of "Pacific Service" we find that it is not an unmixed blessing, the cause being explained in the following brief study:

When on Sunday, March 31st, all the clocks were set ahead one hour the result desired and obtained was the starting of all industries one hour earlier after sunrise than before, closing time coming, of course, one hour earlier in the evening, thus giving workers more daylight hours between the ceasing of labor and dark for use in gardening, overtime war work, etc. Obviously, if people adhered to their ordinary routine and regulated their affairs to accord with the same clock as heretofore, they would rise, eat, work and go to bed one hour earlier under the "Daylight Saving" time than formerly. Looking at this from the standpoint of the lighting company, the most important fact is the going to bed one hour sooner each evening after sunset, for this obviously means that if people adhere to their regular habits the use of electricity or gas for lighting will be curtailed one hour each evening under the "Daylight Saving" schedule. To make this perhaps clearer we can take a definite example:

On April 1st under true time the sun sets at 6.33 p.m. and it gets dark enough to require artificial light at 7 p.m. Under the "Daylight Saving" time it would not

be dark until 8 p. m.; hence, if a person habitually went to bed at 11 p. m. and retained this habit under "Daylight Saving" conditions, he would only use his lights three hours per evening under "Daylight Saving" time, instead of the four hours per evening used formerly.

It was, of course, impossible to accurately predict whether people would fully retain their allegiance to the clock, or whether the difference in their activities due to the extra spare time in the evening before dark might not influence certain of their habits, such as attendance at theaters, clubs or other places of amusement, as well as the time of retiring. This question was made the matter of some study based on statistics and load curves for the month of April, and we now are able to definitely decide that people's habits are entirely regulated by the time shown by the clock, so that predictions which were made as to the reduction in the consumption of electricity and gas are quite fully verified. When it comes to being an absolute monarch the old kitchen clock is in Class No. 1.

The consumption of electricity and gas for lighting is practically the only part of the company's operations affected by the "Daylight Saving," for the use of either commodity for power or heat is, of course, unaffected by the time of sunset. As to the magnitude of the effect, it can be only estimated as applied to the gas sales, for there is no separation between gas sold for heating and that sold for lighting. The probable reduction in sales, however, is about 30,000 M. C. F. for the entire "Daylight Saving" period up to October 27th.

The statistics for the sales of electricity for lighting purposes indicate that for April, 1918, there is a deficit below the normal that would be expected, amounting to 766,972 kilowatt hours. This decrease is based on the normal monthly variation which occurred during 1917 corrected for the increase of load during the last year. The decrease noted above amounts to about 10.3 per cent of the total consumption of electricity for lighting purposes and will undoubtedly continue entirely through the "Daylight Saving" period.

Nor is this decrease in sales accompanied by a fully compensating reduction in costs; for, most of the costs, except for a slight amount of fuel oil used, go on just the same despite the reduced output. In this way the situation is quite

analogous to the results of the jitney operation on the street railway companies. The railway companies had to carry their cars just the same though there were not so many passengers in them, so that their costs continued high while they rev- 2000 enue fell off. In our case the sun acts as the "jitney" and furnishes one hour each evening free lighting service which 10,000 was formerly purchased by the people from "Pacific Service" or other companies at the regular lighting rates.

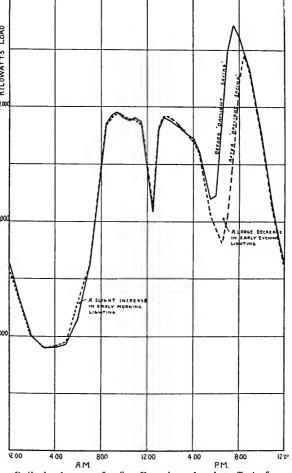
The reduction in lighting consumption is also accompanied by

a lessened peak demand, so that at first sight it would seem that apparatus would be thereby rendered available for other use; but when it is remembered that the "Daylight Saving" condition terminates in October it is seen that any capacity released must be held ready for use during the winter peak. The situation would be very much more attractive from the standpoint of the electric lighting companies if "Daylight Saving" were to be continued throughout the entire year.

The exact method by which we are able to tell definitely that the habits of the people in general are now regulated strictly by the clock may be of interest.

Electric load reports are prepared daily for most of the different communties served by the Pacific Gas and Electric Company, these reports showing the exact number of kilowatts of electric energy delivered to the community for each half hour throughout the day. From these reports curves can be prepared showing graphically the hourly variation of load in the community and for the entire Pacific Gas and Electric Company system. These load curves are as im-120° portant to the operating engineers of the

company as the



Daily load curves for San Francisco showing effect of "Daylight Saving." Black line shows average for week of March 25-30, before daylight saving; dotted line shows average for week of April 1-6, after daylight saving went into effect.

fever charts are to the physician and nurse fighting for the life of a patient, and they tell a very complete story to those who know how to read them. It is found that the load curves of all large communities are very similar. The load is very light from midnight till after 7 a.m. It then increases rapidly to an almost steady full load, which is maintained during the morning hours, sharply decreasing during the noon hour and again coming back to about the same load as in the morning after lunch. At about 4.30 or 5 p.m. the load drops off sharply, indicating the closing of factories and industries. At a time which depends on sunset the load again increases very rapidly, as everyone turns on lights, and reaches a maximum at about 7.30 p.m., true time. The load then begins to fall off gradually, as shops and places of business or amusement are closed and people go to bed, till it reaches the lowest level at 3 a.m.

Under "Daylight Saving" time it has been definitely shown that the part of the load curve due to the power used in mercantile and other establishments, railroads, etc., constituting the day load, is exactly the same, hour for hour, as before, though of course all the events happen one hour earlier according to true time. When the lighting load is considered it is found that lights are turned on exactly one hour later than would be normal under true time conditions, but that the shape of the curve during the going-to-bed period is exactly the same, hour for hour, as formerly. It has further been found that this going-to-bed curve, or curve showing the decrease of the lighting load, is exactly the same with only the slightest modifications from year to year and between various communities on the Pacific Gas and Electric Company system. This indicates that our habits as to closing up our establishments, attending entertainments in the evening and going to bed are wonderfully stable.

It is, of course, not at all certain that we shall continue the regularity with which we now adhere to clock-time habits throughout the entire "Daylight Saving" period. When we take April 1st of the "Daylight Saving" period we find that before "Daylight Saving" time was ever used we had been experiencing practically the same conditions as would exist under "Daylight Saving" time, so far as the evening is concerned, on June 11th, while so far as the morning was concerned February 19th represented accurately the conditions. When, however, we come to the June evening conditions under "Daylight Saving" time we have no parallel in our experience. At the end of June under "Daylight Saving" time the sun will not set until 8.37 p.m. and it will still be light at a quarter past nine. It certainly seems possible that this longcontinued "Daylight Saving" may keep us outdoors much later in the evening busy at sports or work until we become so tired that bedtime will be advanced earlier than has been our habit. The opposite way of looking at this question would be, of course, that we would desire to spend about the normal time indoors in reading, etc., so that if we did not come indoors until 9 o'clock we might put bedtime considerably later than normal. This question is one of pure conjecture, but from the amazing regularity with which we have in the past observed clock time, I have considerable doubt that ths effect will be at all prominent, and our experience thus far in the month of June bears out this prediction.

While daylight as late in the evening as 9 p.m. is to us a surprising and abnormal condition, artificially created by "Daylight Saving," to the residents of Canada and other northern latitudes it is the normal condition. As we proceed northward the summer days become longer and longer till within the Arctic Circle they become six months long.

Thus by "Daylight Saving" we secure the pleasant long summer days of a latitude one thousand miles farther north, and without any of the inconveniences and expense of travel.

Co-Operation to Be the Watchword of the Electrical Industry in California

Campaign for a better understanding among all concerned inaugurated at the Del Monte convention of the N. E. L. A. and subsequently detailed at a get-together dinner in San Francisco.

Plans for a comprehensive electrical co-operative campaign throughout the state of California for the spread and advancement of the electrical industry were laid before a gathering of representative electrical men at a get-together dinner held on the evening of June 7th in the rooms of the Commercial Club, San Francisco.

The occasion was an outcome of the recent convention of Pacific Coast Section of the National Electric Light Association at Del Monte the month previous. At that convention it was decided that all branches of electrical industry should combine in a co-operative campaign for the general good of the industry. An advisory committee was selected, consist-

ing of the following: L. H. Newbert, chairman; G. E. Arbogast, vice-chairman; G. B. McLean, A. E. Wishon, R. M. Alvord, D. E. Harris, H. C. Reid, M. L. Scobey. Messrs. W. F. Brainard and J. M. Redpath, of San Francisco, and A. L. Spring, of Los Angeles, were appointed field representatives of the committee and headquarters were established in the Rialto Building, San Francisco. It was decided that at the outset the campaign in its essential particulars should be presented to the electrical men of California in such fashion as to instill in them a spirit of enthusiasm and a desire to do all in their power to help the good cause along. No better way of effecting this than by a gathering at which each branch of the industry should be represented in the general discussion.

The invitations sent out met with such generous response that fully four hundred diners gathered at the tables in the banquet room. Mr. John A. Britton presided and acted as toastmaster.

The plan of the co-operative campaign was explained by Mr. Newbert, as chairman of the advisory committee, in clear and concise fashion.

"It is our common purpose to better discharge our duties to serve the public," said Mr. Newbert, in part. "It is felt that the day of individual effort is over, that collective effort in the one direction must take its place. Today the selfish, non-co-operative merchant still exists, but he is rapidly passing out. We have reached an era when the successful trader must respect his competitor and do as he would be done by. In fact, the Golden Rule has been adopted as the beacon light of the electrical industry."

Mr. Newbert explained that the campaign had received the endorsement of the N. E. L. A. and would be financed by the central stations and the jobbers alike. It would be the business of the field representatives to travel over the State and bring about a condition of general cooperation. A part of their duties would be to induce contractors, dealers and others to maintain attractive places of business and, so far as possible, establish

"We intend to settle for all time the question as to who shall sell current-consuming devices," said Mr. Newbert. "The central stations will give that branch of the business up as soon as they can do so without injury to themselves The slogan of the campaign is to be 'a high standard of moral ethics for the merchandising branches of the electrical business.' We ask the support of all concerned for the benefit and profit of the industry."

a standard of prices for their wares.

Mr. Newbert was followed by Mr. H. C. Reid, president of the California Association of Electrical Contractors and Deal-He expressed himself heartily in favor of any movement that would result in developing the merchandising efficiency of the electrical business. Speaking for the contractors and dealers, he said they had suffered from lack of capital, from unregulated competition and from lack of standardization. The sort of campaign that he thought would prove successful in its general benefit had been summarized by Mr. W. L. Goodwin as a campaign of education in the trades papers and the establishment among the men of the electrical industry of a free relationship, with the acceptance of mutual responsibility and the recognition of a community of interest.

Mr. Samuel Kahn, the newly elected president of Pacific Coast Section, N. E. L. A., spoke for the central stations. He endorsed heartily the campaign as outlined and said that so far as the public utilities themselves were concerned they had generally come to recognize that in good service lay the best and surest profits.

A welcome contribution to the speechmaking was made by Hon. Frank R. Devlin of the California State Railroad Commission. Mr. Devlin brought with him some figures compiled by the engineering department of the Commission giving the present output of electric power in California, from both steam and hydro-electric plants, showing that according to present figures no less than ten million barrels of oil could be saved by the general adoption of the hydroelectric process to the exclusion of the steam plant; also, according to estimates for the future, in three years the universal adoption of the hydro-electric process would mean the saving of twenty million barrels yearly.

"We don't know how badly oil may be needed to get our boys across the water," said Mr. Devlin with significant emphasis. "The state of California saved the nation at the time of the Civil War through its gold production; it may save civilization through its oil fields and the water of its mountain streams."

Mr. Devlin entertained no apprehension that the electrical industry would be threatened with any economic loss at the conclusion of the war and during the period of readjustment. He thought that anything conducive to the success of the parent would conduce to the success of the child and there would be both field and market in the future for the smaller as well as the larger uses of electrical power. In the meantime, the market throughout the war would be twice as large as could possibly have been created under normal conditions.

An address that went far toward presenting the real business side of the question was given by Mr. A. B. C. Dohrmann. It was not the first time Mr. Dohrmann had spoken upon the subject of co-operation, for with him it may be said to have been a hobby for some years past. His address was directed mainly to the men he called "the little fellows that peddle the stuff." His advice to them was not to

pay the central stations to get out of the appliance business but to force them out.

"They don't want to sell appliances if they don't have to," declared Mr. Dohrmann. "If you want to take the business from them you don't have to do it by cutting prices, but by expert salesmanship. Let the people know you are in the game. Your expenses will keep going up all the time, so you would better standardize your system of figuring your cost of business; and that, my friends, can only be done through an association such as you propose.

"A man who tries to build up a business by underselling his competitors lasts only so long as his pocketbook. Tell the facts of your business openly and you'll

find it won't hurt you."

Mr. S. M. Kennedy, of the Los Angeles Gas and Electric Corporation, traveled up from the southland to tell the assemblage that, in his opinion, the central stations owed an obligation to the manufacturer to exploit appliances if others didn't. Speaking for his company, he said their books showed a total of not less than \$780,000 received in one year from the sale of lamp-socket appliances, at an overhead cost of only 25 per cent. It was, he thought, up to the dealers to show they could do better.

"Where reports show they can look after the appliance business better than we can we will withdraw our men," declared Mr. Kennedy amid the cheers of his audience.

The speech-making was closed by Mr. Albert H. Elliot, representing the electrical jobbers. His idea was that there should be no hard and fast rule as to who should and who should not sell appliances.

"You can't Prussianize the business," he declared. "You can't make the manufacturer quit selling to the consumer. We say to the manufacturer, 'Sell all you can.' We say the same to the central station, but we do say to all, 'You must study the rights of each group of electrical men and respect their ethics.'"

From a get-together standpoint it was a most successful evening. The co-operative campaign is now in full swing. It is to be given a thorough test and a fair trial. Upon the result will depend, in a large measure, the future of the electrical industry in California.



Members of the P. C. G. A. Meet in San Francisco to Exchange Ideas and Prepare for the Los Angeles Convention

Members of the Pacific Coast Gas Association met at their second get-together dinner of the present season on the evening of Saturday, June 15th, at the Palace Hotel in San Francisco. President John D. Kuster was in the chair and the evening's entertainment was especially good from both business and social points of view.

The most important business feature was the presentation by Chairman Leon B. Jones of the Papers and Meetings Committee of the program, as compiled to date, for the September convention in

Los Angeles. Of this it may be said that it deals mainly with subjects that are closely allied to the part gas is playing in the war program. The list follows:

1. Selling Gas for Industrial Uses. By C. M. Robert, industrial engineer L. A. G.

& E. Co., Los Angeles.

2. Use of Natural Gas for Power in Gas Engines. By F. H. Bivens, district manager at Pomona, and S. W. Todd, new business manager, both of Southern Counties Gas Co.

3. Complaints and Their Correction. By Fred Shafer, superintendent Southern California Gas Co., Los Angeles.

4. New Business. By Frank Weiss, manager New Business Dept., L. A. G. & E.

Co., Los Angeles.

5. Use of Gas in the Army Cantonment at Camp Kearney. By D. J. Young, assistant general superintendent, and A. E. Holloway, manager New Business Dept., San Diego Cons. Gas and Electric Co.

6. Gas Supply at Camp Fremont. By W. T. Kellogg, superintendent Gas Distribution, Redwood District, P. G. & E. Co.

7. Gas and Shipbuilding. By H. P. Pitts, manager Commercial Dept., San Fran-

cisco District, P. G. & E. Co.

Vice-President A. B. Day reported for the Committee on Membership the receipt of twenty-nine new applications. It was interesting to hear that two of these came

from far-away Honolulu.

Other committees reported progress. Secretary Henry Bostwick was warmly congratulated upon Volume 11 of the Proceedings of the P. C. G. A., recently issued from the press. It was with regret that the meeting received the report of Chairman P. S. Pedersen of the Committee on Exhibits to the effect that, owing to the existing conditions, it had been decided not to hold the usual exhibit of gas appliances at this year's convention. With this one exception prospects for the Los Angeles, gathering appear unusually rosy.

Following these reports several speakers were heard from. It was a great delight to have three officers in khaki with us. One was Captain R. W. Brewer, of the British service, who won golden opinions from us at the Santa Cruz convention last year; another was Captain F. L. Goord, also of the British service, who came to us from the trenches; the third was Captain Brophy, of the United States Army, who is out on this coast on special work connected with the Gas Defense Service.

Captain Brewer gave some interesting figures upon the industrial uses of gas at the present time in England. For example, one firm of steel manufacturers in Sheffield is using 500 million cubic feet per annum; while in the same city there are 642 gas furnaces in operation, using an aggregate of 372 million cubic feet, and there are internal combustion engines in use which account for 789 million more.

"The result of this enormous use of gas has been a considerable reduction in the price of gas to consumers," announced Captain Brewer with emphasis, "and that in spite of the general increase in the cost of labor and material.'

Captain Brewer spoke also of the work done "over there" in the recovery of byproducts from gas manufacture; also of the uses of gas as motive power for automobiles. Concerning the latter it was interesting to know that in London gas is furnished for automobile use at four shillings per thousand cubic feet, which, Captain Brewer said, is equal to gasoline at twenty cents a gallon.

Captain Goord detailed some of his experiences in gas warfare at the front and interested his hearers with a description of the development of the gas mask. Captain Brophy, in explaining the gas defense service campaign, expressed the opinion that the war of the future would be largely one of atmosphere, that there was a constantly increasing use of gas shells at the front and improvements both in these and in gas masks were both constant and necessary. Captain Brophy declared himself delighted at the wonderful co-operation he had received from the gas men of the West in the national

campaign.

Mr. E. C. Jones addressed the meeting in his usual pleasant way and read an interesting letter from our friend Harry Strange, late of Honolulu, who is now performing special service at the front along lines for which his training as a gas man here had especially fitted him. Former presidents C. B. Babcock and Frank A. Leach, Jr., were heard from. The former spoke enthusiastically of the part gas is playing in modern development, while the latter received congratulations on the completion of twenty-one years in the gas service. L. H. Newbert, H. P. Pitts and F. S. Myrtle also addressed the gathering.

"Pacific Service" to Draw Power from the Extreme Northern Limits of the State

A contract of unusual importance as affecting the electrical power situation in the northern section of the state of California has been completed between the Pacific Gas and Electric, Northern California and California-Oregon power companies whereby, through connection of transmission systems, "Pacific Service" will shortly have some sixty million kilowatt hours a year to add to its electrical

distributing system.

Power to the amount of some 8000 kilowatts in installed capacity is to be taken from the California-Oregon Power Company's Copco plant in the mountains of Siskiyou County, near the Oregon line. At the present time that company's transmission lines reach as far as Castella on the south, but under this new agreement these lines are to be extended down to Kennet, in Shasta County, where they are to join those of the Northern California Power Company, which maintains a transmission line from Kennet to Colusa Corners in Colusa County. The chain is to be completed by the Pacific Gas and Electric Company reconstructing its line from Knights Landing into Colusa Corners, so that the power generated at Copco may be delivered into the general system of "Pacific Service," with the Northern California Power Company acting as middleman, as it were, or, rather, as a conduit for the delivery of California-Oregon power on the north over to "Pacific Service" on the southern end of the line.

Our company's engineering department estimates that the power so delivered under the terms of this contract will amount to 49,000,000 kilowatt hours a year, at least. In addition, the Northern California Power Company undertakes during the seven months' period from October to April, in each year, to deliver to the Pacific Gas and Electric Company 4000 kilowatts of its own power. This, it is estimated, will provide "Pacific Service" with an additional 11,000,000 kilowatt hours to place at the disposal of its consumers. Altogether, then, the contract provides for 60,000,000 kilowatt hours a year. This contract is to endure for ten years.

Railroad Commission Appoints a Power Administrator for Northern Section of California

The California State Railroad Commission has assumed entire control of the power situation in the northern section of California by creating a power administration department, with Mr. H. G. Butler in charge.

It will be Mr. Butler's business to direct the distribution of electric power from the plants of the Pacific Gas and Electric, Great Western, Sierra and San Francisco, Western States, Coast Counties, California-Oregon and Northern California power companies to consumers of all classes. The Power Administrator will have authority to increase or curtail output and distribution wherever and whenever he deems it necessary or advisable; in fact, his office will be in the nature of a clearing-house for inter-company power service.

E O SE A

OUR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION



An unusually good meeting was held in Oakland on the evening of Tuesday, May 28th, when Sergeant Harold C. Blote, of the United States Aviation Reserve, told of his personal experiences in the French army on both the Western and Balkan fronts.

The young sergeant was a member of the first Stanford University ambulance unit which was sent overseas early in 1917 by San Francisco Chapter of the "Friends of France." Modest and unassuming in his bearing, the story he told was one of adventure that thrilled all his hearers.

He sailed to Bordeaux in the first ship that made test of the Kaiser's blockade. He went to Paris and spent three weeks there, observing with some surprise the stoical calm of a usually temperamental people. He visited the hills by the Marne, studded with white crosses that mark the heroic sacrifices made in the defense of Paris, and he stood upon the hillside by Verdun, amid a scene of absolute desolation where the only persons seen around were a few soldiers on police duty. He next visited the Lorraine front, where he mixed with the "Blue Devils"; then he went on the Champagne front, where he had an opportunity to observe the Foreign Legion.

Not content with this young Blote went to Salonika, one of a band of twenty volunteers to undertake this trip. He witnessed an attack by French negro troops and Arab spahis upon the Austrian entrenchments back of Monastir, and he pictured the horrors of Serbia eloquently when he told of there being two thousand Serbian officers in Salonika without a single private soldier under them.

Perhaps what thrilled his hearers most was his description of the parade of General Pershing's troops in Paris on July 4th, when two thousand men marched through the streets to the enthusiastic bravos of a delighted populace.

"The French count on us and we have got to come through," declared Sergeant Blote, with emphasis; and so far as his audience was concerned there was but one response.

The program of entertainment included

songs by Mr. Lowell Redfield, accompanied by Mrs. Redfield at the piano, and selections by Miss Alice Davies, a young local violinist.

The educational courses upon the subjects of gas, electricity, accounting and finance are now in full swing. Messrs. E. C. Jones and J. P. Jollyman have found their lectures on gas and electricity, respectively, so popular that they have inaugurated classes in Oakland for the benefit of the employees of Alameda County and near-by districts. This, of course, means that the lectures are delivered in duplicate, but the gentlemen named are more than delighted to find sufficient interest is being taken to make their efforts really worth while.

The classes in the various courses of instruction will last until next September.

It is proposed to hold the next out-oftown gathering in the Petaluma District, probably some time in August. Between the present and that time the Association's regular monthly meetings will be suspended, it being the summer vacation period.

There are, however, two features of particular interest to the members which will be held in the near future. By the time this issue of Pacific Service Magazine reaches its readers the annual dinner will have been held. The evening is Thursday, June 20th, and the place is the Palace Hotel, San Francisco. It is understood that Senator Chas. P. Cutten, of the Rate Department, will act as toastmaster, while Professor Mills Gayley of the University of California has promised to make the principal address of the evening.

An excellent program of entertainment has been arranged. A complete account of this is promised for the next issue of the magazine.

It has been decided to hold the annual picnic on Saturday, July 20th, at Pinehurst, in the foothills back of Oakland. There will be the usual program of outdoor sports and varied entertainment.

News From Our Boys Now in the Service of the United States

Gathered by the Committee on Relations with Our Employees in the Army and Navy

News comes from Camp Kearney that Second Lieutenant Dwight W. Jones of the 144th Field Artillery ("The Grizzlies") has been assigned to the 115th

Ammunition Train there.

Lieutenant Jones was formerly assistant superintendent of the Gas Department of "Pacific Service." Last August he enlisted with "The Grizzlies" as a private and was successively promoted to corporal and sergeant. He was admitted to the Third Officers' Training School and recently graduated near the head of his class in field artillery, receiving his commission as second lieutenant.

From Thos. Mulligan, formerly of the Gas Department, San Francisco District, now in New York:

"I am aboard the cruiser U. S. S. Seattle with 1800 other boys, some bunch. Did not have much training at San Pedro and had less at Brooklyn. I am having some fast trips. Do not stay very long at any one place. All the training I have had is packing stores and, believe me, when you are a sailor you have some stores to carry.

"Next week we coal and that I expect is another fine job. Like the ship fine and they treat you fine and give the best

of chow. We even have pie.

"Been to New York four or five times, but for the last three or four days it has

been snowing and isn't any fun. Give me sunny Cali-

"It has been rough on the little steamers and some of the fellows fell overboard. One of the fellows was drowned getting aboard the ship. Yesterday a bunch went out and we dragged the bay for the body, but did not find it.

"I guess we will be sailing to dear old France in a few days, and I hope we land so I can get some souvenirs. Generally the first trip the armed guard makes they just convoy the ships to near France and do not land. When we get

back they put you on oil boats and merchant ships—some life. Will be able to tell of some experience when I get back."

Jos. N. Baker, formerly of Sacramento, writes very interestingly of training life in the United States Navy. He states that his address is in care of Radio Armed Guard, Navy Yard, Philadelphia, Pa., whether he is on this side of the Atlantic or the other, and that he would be glad to hear from some of his old associates.

From Camp Lewis, Washington, comes word that Lieutenant Emmet N. Britton, of Headquarters Company, 363d Infantry, has been selected from his regiment as one of an advance guard of "liaison" officers who will proceed to France ahead of the Ninety-first Division.

A similar honor has been conferred upon Second Lieutenant Richard H. Stevenson, 316th Field Battalion, Signal Corps. Lieutenant Stevenson is a brother of Mrs. P. M. Downing. He enlisted first in "The Grizzlies," but afterward changed to the Signal Corps.

In all probability both officers will be well on their way before this notice reaches our readers.

The following letter was received by Mr. Leach, manager of Alameda County District, from Frank Pape, the son of J. H. Pape, manager of the Berkeley office.

Frank was employed in the Gas Department, San Fran-

cisco District.

"No doubt you will be surprised at receiving this letter, but I thought I would drop you a line so that you would not think I had forgotten your many kindnesses of the past.

"I am, as you perhaps know, at Pelham Bay Naval Station, N. Y. It is a camp of about 6000 men and they are enlarging it now to accommodate 20,000 men. It seems there is no place near New York where they can concentrate as many men as they need.

"They have taken about



Lieut. Frank T. Gash, 26th Engineers, Camp Dix, N. J. (Formerly of Napa Dis-trict.)

———— men from here to man the Dutch boats, among them being about one hundred California boys.

"The boats were in a very dirty condition, but the engines and boilers were all in good shape. At the present time they are only using a couple of them, but will put the others in commission very soon, I expect.

"I was talking with an English captain while in New York and he said the Yankee boys were doing great work on the Irish coast. He said it was remarkable the way they had picked up the 'tricks' of 'Fritz's subs.

"They are turning out 200-foot sub chasers here like we turn out 'Pacific Service,' and you know that is fast and good.

"There are about twenty-two men in a crew with two officers. They are doing a great part of the patrol work, especially along the south French coast.

"At the present time I am waiting my turn to enter the officers' class for the Naval Auxiliary. Of course, if anything turns up and they need men badly, I no doubt will have to go out as a seaman. I am hoping my turn will come before that happens. All I can do is hope and study, which I am doing very regularly now."

On May 18th Captain George H. Canfield, formerly of the Land Department, was appointed major of the Second Battalion, 316th Engineers, stationed at Camp Lewis.

Lieutenant Walter D. Sultan, one of the many engineers who have left "Pacific Service" to go into the Army, writes from Fort Sill that he has been assigned to the Engineering Section of the Aviation Corps, after receiving special training at schools at Columbus, Ohio, and the Massachusetts Institute of Technology. Mr. Sultan is very enthusiastic about his new work and his many friends will be interested to know that although an engineer officer he has been "up-in-the-air" several times.

The young man named in the following notice, which appeared in the San Francisco *Bulletin* on May 14th, formerly



Harold Lee Ross, Electrical School, Mare Island, Cal. (Fomerly of Sacramento District.)

was a cadet engineer at the Potrero under Mr. L. B. Jones:

"Lloyd Berthaud, a young San Francisco flyer, has invented a scouting aeroplane which is under consideration by the War Department at Washington. Young Berthaud recently won his lieutenant's shoulder straps. At the same time he was made instructor of aviation on Love Field, at Dallas, Texas.

"Lieutenant Berthaud began studying aviation at the outbreak of the war with the hope of getting to France. He accompanied Miss Katherine Stinson as

her mechanician on her Canadian tour and remained with her until the United States entered the conflict.

"He was appointed to the cadet's school at Cornell University, and later to Texas. He made a record flight recently from the Love to Dick Field.

"Lieutenant Berthaud is the son of Mrs. Bertrand Callaghan of 2751 Clay Street."

Lieutenant W. B. Mel has returned to the Presidio from Fortress Monroe, having received his commission as first lieutenant while away. He is assigned now to the 62d Artillery.

Mr. S. B. Shaw, an engineer of the Valuation Department, has enlisted in the Navy and was given the rank of first-class yeoman and assigned to duty at the Union Iron Works in San Francisco.

The employees in Alameda County have subscribed approximately \$60 for Smileage Books which have partly been distributed to boys who are in cantonments in this country. If any of the boys at the various cantonments will notify E. C. Johnson, of Alameda County District, of their address a Smileage Book will be sent from those still remaining on hand.

Lieutenant H. T. Sutcliffe, formerly employed in Placer District, writes while going through Nebraska at about fifty miles per:

"We are at last on our way East after spending about three months in training and I think that all of us are very glad to be here, in spite of the fact that we were all sorry to leave Portland. It means that at last we are about to do our part in the business that we have been thinking about and preparing for and we are certainly going to do our best. We do not know what our immediate future is to be, but we all hope for an early embarkation and arrival in France. While we are still here and while we have a chance, I wanted to write you all again and bid farewell. Later on I may be too busy."

The Committee on Relations with Our Employees in the Army and Navy has also received from the employees in a Good Cheer and Tobacco Fund over \$60. From this fund they are

sending to the bonys in this country and in France tobacco, snuff or smokes, or such little needs as may be called to their attention that the boys would appreciate.

Mr. W. T. Jones received the following letter from John V. Spinetti, formerly of the Electrical Department. Mr. Spinetti is now at Vancouver, Wash.

"Received your splendid letter of April 30th and was glad to know of the interest that you are taking in us boys who are in the service. It is encouraging to us to know that our friends and homefolks are interested in us, and are behind us.

"Your roll of honor is a splendid system of keeping all the employees notified where we are, and which branch of the service we are in.

"I receive the PACFIC SERVICE MAGAZINE regular every month, which I enjoy reading very much."

The thrills of shooting through the air were too great to keep H. M. Anderson of the Alameda County District long engaged as a stenographer in the 185th Aero Squadron. As soon as he arrived in England he changed his occupation to that of rigger and in a letter from him, dated May 9th, he states that he will now fly, which will be in line with his present duties.

As ever anxious for news from home, he says that all they do is work from 5.00 a.m. till late at night, sometimes, depending upon the needs of the service. He turned out his first ship the first week



Sapper Stuart N. Smith, 6th Canadian Ry. troops, "somewhere in France." (Formerly of the Alameda County District.)

of May. As a rigger and a flier also he will become thoroughly experienced in the art of building and operating airplanes. To quote from his letter: "Flying is certainly one of the greatest thrills a fellow can have, to shoot through the You never saw Art Smith or Beachy pull off the stunts these fellows do; it is an everyday occurrence to see them do loops, vertical banks, tail spins and roll around in the air.

"Just had an intermission to watch a couple of fellows have some fun flying over our camp. They were shutting off the motor and coming straight for the

coming straight for the camp—could almost touch them—and then they started to climb again. Nearly the whole camp was out. Was intensely more thrilling than it sounds, as we are camped in a place pretty well surrounded by trees which are scattered here and there, necessitating considerable judgment on the part of the pilot."

A letter received from C. E. Bucknell, formerly of the Electrical Department, under date of May 13th, states that he hopes to be sent to France very soon.

Chas. E. Altpeter, G Company, 363d Infantry, Camp Lewis, Tacoma, Wash., formerly of De Sabla District, writes:

"At present I am digging dug-outs. It is very interesting work. We work shifts, eights hours on and twenty-four hours off. Day and night and every day in the week. I have met several 'Pacific Service' boys here, among them Leo M. Kass, a former operator at De Sabla. He is now operating the Camp Lewis substation.

"Receive the magazine every month and sure do enjoy reading it."

Lieutenant Chas. C. Jensen, Taliaferro Field, Fort Worth, Texas, formerly of the Electric Distribution Department, Alameda County District, writes:

"Well, I finally received my commission as second lieutenant. Some boys are held up for over a month. If the parents are from an enemy country it is necessary to produce affidavits as to their

citizenship, loyalty, also a statement of the amount of

their property, etc.

"I have been assigned to active duty, getting twenty-five per cent flying pay. At present I am instructing and, believe me, a few trips with a cadet and you are sure on edge; you wonder how the old bus will stay up without getting thrown into a spin or some other trouble.

"Here we give the cadet nine hours of instruction, at least, before letting him go solo, which is quite different from one and a half to three hours that I got. I must confess that I did not

learn much in the one and a half hours, but what could you do when they told you to go ahead and break your neck? I am sure going to give my cadets all the time they ask for. From here I move to Camp Dick where we train with guns, and will be sent to a bombing school before 'going across.'

"We are getting new ships equipped with 150-h. p. motors and can go about one hundred miles per hour, and, say, they can climb! Not any trouble to go 18,000 feet, whereas 10,000 is the limit of the training planes.

"Send a little sea breeze with your let-

ters this summer."

R. W. Netherton, 400th Aero Construction Squadron, A. E. F., France, formerly of Contra Costa District, sends us this word:

"I am receiving the magazine here regularly and it serves to keep me in touch with my former employers and friends. In the magazine I noticed the name of Al Newhardt of Marin District, who, I find, has been in my squadron for the past three months.

"This is the biggest aviation camp in France. The camp has all been wired and all construction of power plants has been done by linemen, who climb up and down just as if they were at home and not getting \$1.10 per day and eating 'corned wolly.'"

Sergeant Harry Abernethy, Wagon Company No. 3, 23d Engineers, with the A. E. F., writes from France that a package of letters addressed to him at a camp



Major G. H. Canfield, 316th Engineers, Camp Lewis, Wash. (Formerly of Land Department.)

in Maryland reached him "over there." He states that they had a very enjoyable trip across the "pond," landing with the best of spirits in a pretty sea-port town. Here he had his first sight of wooden shoes. They were immediately taken to a U. S. rest camp formerly used by Napoleon.

"At present we are working on a new railway and I hope we will soon move up closer to the big fire-

works," he states.

"I might add that an electrical engineer would starve in this part of the country, as there is very little 'juice' used here; things seem to

be so far behind the times to one who has lived in the States. They draw the water for household use from pumps in the streets, and when traveling through the country one frequently sees women doing the family washing on a rock beside a small stream or canal.

"We have had the 'Y' with us whereever we have been; they are doing lots

of good work 'over here.' "

G. V. Brewster, 32d Infantry Band, Scofield Barracks, Honolulu, H. T., formerly of Sacramento District, writes:

"I desire to thank you for the magazine and this is to say that I am in the best of health and enjoying the experience here."

Joseph J. Madden, chief electrician U. S. Naval Air Station, formerly of the Electric Distribution Department, San Francisco, writes from "somewhere in France" as follows:

"A line to say that Mr. John A. Britton's kind message of thanks for past photo received, so took a hunch from that and decided it was about time that I should help you in your rogues' gallery collection of the many notables from the Fifth Street side of 'Pacific Service.'

"I lost a tough game of ball here a week ago Saturday, score 5 to 3. It sure was a hard one to lose, but the gang came back the following day for a win score, 2 to 1, so you can see we are not playing as rotten ball as people would think, even if we are in a strange land. The people here take to baseball as a duck does to water; that is, they make good fans, but

as to playing the grand old game, time will tell.

"I had occasion to look up a meter one day here, but was unable to get a photo of same as the light was against us and, believe me, old scout, I used three screws, do you get that? I said three, not one. It was a T. H. Integrating, built similar to a G. E. Co's I-14."

The following is an excerpt from a letter received from Captain A. R. Thompson, Camp Devens, Ayer, Mass., late engineer of Electrical Distribution, San Francisco District:

"You, of course, have noted from the heading that I am no longer at an Officers' Training Camp. I completed the course two weeks ago and successfully held my captaincy. You will probably be interested to know that over fifty per cent of the commissioned men in my company were sent home and put on the mactive list. I have been assigned to the 29th Engineers, Company B (now overseas) and would have been 'over' by now if it were not for the fact that I was ordered here to go over with another engineering company, which company immediately upon my arrival was put in quarantine and won't be out of it for another week. Such is luck. Am in hopes, however, of joining another regiment which is due to go this coming week.

"Write me here; will be mighty glad to hear from you and dear old San Francisco. If I am lucky and get away before your letter reaches me, it will be forwarded overseas. I wrote Mr. Barrett last week, giving him my overseas address. At that time I felt absolutely positive that I would be gone before this. You might mention this to Mr. Barrett and tell him that I would be mighty glad to hear from him here."

Men Wanted for the Aviation Service

The following telegram from Major J. Paulding Edwards to our Mr. Britton is self-explanatory. Major Edwards at one time occupied the post of chief engineer for the Northern Electric.

June 11, 1918.

Sent from Aviation Repair Depot, Dallas, Texas.

Addressed to John Britton, San Francisco, California.

There are hundreds of skilled young men in your city and community about to be drafted who prefer serving in the Aviation Section and would be glad to know of this opportunity to get into that branch immediately. We are authorized to secure several hundred skilled men by voluntary induction in the following trades: Engine repair men, electricians, automobile assemblers and cabinet makers. New squadrons are being formed and opportunities for advancement are excellent. Men showing proper qualifications during service here may be recommended to take instructions to become flying officers. Kindly give this extensive publicity as it is a service both to our country and to your citizens who will be drafted into some branch of the service where their training will not be used to best advantage. Candidates will submit letter stating qualifications to Captain M. C. Burnside, Aviation Repair Depot, Dallas, Texas.

MAJOR J. PAULDING EDWARDS.

News of the "Pacific Service" Rifle Club

By S. E. CARPENTER, Secretary of the Club

The shooting season has just begun and we should strive at once to have many more men on the range. It is up to each one of us to help out by getting new members, or more of the present ones, to show up at shoots.

For several months past we have been holding practice shoots, for the most part. During the winter season the targets were taken down after each shoot to keep them out of the rain and the 500 and 600-yard ranges were not used. All danger of rain now being past, and the telephone lines having been fixed up, the range is in perfect order for handling a large number of men on the firing line.

Many good scores were made in the practice shoots and in the one held so far over the complete course one man qualified as expert, three as sharpshooters and three as marksmen. This is an extremely good showing and before the 1918 season closes a very large number of high qualifications are expected. The Government has again resumed the free issue of Krag ammunition in limited quantities, which assures us of an ample supply of ammunition for all.

Members, talk rifle shooting enthusiastically to your fellow-employees, in order that they may receive the benefit of the training acquired by use of the army rifle.



The Creditable Showing Made by "Pacific Servic Saturday,

In a spectacle that will ever hold prominent place in San Francisco's record of patriotic endeavor, "Pacific Service" has received honorable mention for its representative participation. Our company's contribution to the ranks of able-bodied enthusiastic young women that swung jauntily up Market Street on that memorable morning numbered seventy. In the group here portrayed, Miss J. E. Doub, of the Law Department, who captained the "Pacific Service" contingent, stands prominent in the background. Others in the group include:

President's Office: Misses Effie M. Brandt, Lucy Tackney, Ethel J. Heinerikson.

Electric Department: Misses L. Curtis, M. Murphy, Louise Howell, Blanche Sonnelborn, Freda Reisinger.

Gas Department: Miss M. C. Willing. Auditing Department: Misses Anne L. Davies, Edna Sullivan, Georgette Renault, Alvie Rasmussen, Nonie O'Connell, Margaret Dolan, Catherine Dolan, Dorothy Frazer, Ruby Pierano, Hazel Jasmin, Edna McNulty, Maude Durkin, Antoinette Mc-Clure.



in the Great Red Cross Parade in San Francisco, by 18, 1918.

Law Department: Mrs. Sadie T. Hill, Mrs. R. R. Barkley.

Land Department: Misses Zita O'Connor and L. Vanderwhite.

Publicity Department: Miss E. V. Horn. Claims Department: Mrs. M. Holton, Mrs. L. O'Neill.

Drafting Department: Misses R. Lamont and V. Himes.

Rate Department: Miss E. Braesch.

Telephone Department: Misses Anna Joesten, M. Gray, Helen Larsen, Reita Mc-Omie, Mrs. Ida Egan. Stationery Department: Mrs. R. Turner, Misses E. Theisen, N. Riordan, R. Desmond.

San Francisco District: Misses B. J. Dale, C. E. Cosgrove, H. Vollmer, C. R. Low, M. Hooley, E. Sequine, J. Sharkey, L. Moore, E. Leavy, L. Keane, A. Dale, M. Cortese, M. Hossfeld, E. Kentzel, F. Hunter, A. Sharkey, L. Hanley, D. Molinari, V. Deane, Mesdames McInerney, C. Ecks, H. Wood.

Note the banner recording the "Pacific Service" roll of honor.

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

A ppended are preliminary income account statements, in condensed form, for the month of May, 1918, for the five months ended May 31st, 1918, and for the twelve months ended May 31st, 1918, contrasted with the same periods of the pre-

ceding year.

Operating conditions in May were comparatively favorable, with a normal supply of water for the operation of hydro-electric plants. Effective June 1st; 1918, oil prices advanced $27\frac{1}{2}$ per barrel, and it is also anticipated that the general shortage of water will make itself felt in June, so that from these and other causes substantial increases in expenses may be expected during the remainder of the year.

PRELIMINARY INCOME ACCOUNT

Month of May

	1918	1917	Increase	Decrease
Gross Operating Revenue Expenses, including Taxes, Reserves for Depreciation, etc	\$1,696,260.19 1,104,888.53	\$1,568,814.03 987,791.64		
Net Earnings from Operation	\$ 591,371.66	\$ 581,022.39		
ADD Profits on Merchandise Sales and other Miscellaneous Income	39,013.63	36,238.95	2,774.68	
Total Net Income	\$ 630,385.29	\$ 617,261.34	\$ 13,123.95	
Deductions: Bond or other Interest Apportionment Bond Discount and Expense Accrued Dividends on Preferred Stocks		15,418.28	8.13	
Total DeductionsBəlance				

FIVE MONTHS ENDED MAY 31ST

	1918	1917	Increase	DECREASE
		\$8,146,595.42	\$ 602,895.17	
Expenses, including Taxes, Reserves for Depreciation, etc	5,764,633.80	5,055,863.29	708,770.51	
Net Earnings from Operation	\$2,984,856.79	\$3,090,732.13		\$ 105,875.14
ADD Profits on Merchandise Sales and other Miscellaneous Income	195,121.47	184,097.26	11,024.21	
Total Net Income	\$3,179,978.26	\$3,274,829.39		\$ 94,851.13
DEDUCTIONS: Bond or other Interest				
Total DeductionsBalance		\$2,377,484.39 \$ 897,345.00		\$ 134,275.64

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED MAY 31ST

	1918	1917	Increase	DECREASE
Gross Operating Revenue Expenses, including Taxes, Reserves for Depreciation, etc			\$ 1,476,166.91 2,155,146.90	
Net Earnings from Operation	\$6,852,814.89	\$7,531,794.88		\$ 678,979.99
App Profits on Merchandise Sales and other Miscellaneous Income	519,371.36			\$ 644,339.13
DEDUCTIONS: Bond or other Interest	185,116.92 1,488,279.98	\$3,908,017.00 178,093.69 1,424,363.68 \$5,510,474.37	7,023.23 63,916.30	
Balance	\$1,562,319.92	\$2,506,051.01		\$ 943,731.09

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF MAY 31ST

May 31st	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	108,529	46,579	5,377		160,485
1908	124,347	56,590	5,606		186,543
1909	131,361	64,367	6,233		201,961
1910	142,075	73,507	6,564		222,146
1911	155,860	90,760	6,867	6	253,4 93
1912	181,904	105,466	7,383	157	294,910
1913	198,334	120,329	7,342	240	326,245
1914	210,656	136,961	8,647	305	356,569
1915	223,038	156,521	9,147	353	389,109
1916	226,936	169,483	9,823	388	406,630
1917	234,987	184,484	11,869	415	431,755
1918	246,956	199,412	12,881	447	459,696
Gain in 11 years	138,427	152,833	7,504	447	399,211

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month.

 Year's subscription
 \$1.50

 Single copy
 .15

Published by the
PACIFIC GAS AND ELECTRIC COMPANY
at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

JUNE, 1918

No. 1

EDITORIAL

On Tuesday, May 28th, the California State Railroad Commission, the regularly constituted rate-making body of the State, rendered three decisions granting increases in rates for gas furnished by this

company to its consumers.

These decisions establish graduated scales of rates for different districts of the "Pacific Service" territory. A general surcharge of 10 cents per 1000 cubic feet is added to the rates so established to meet the extraordinary conditions under which our company is operating, the idea being to increase or decrease this surcharge at any time in the future according as it shall appear to the rate-regulating body that those conditions have become either aggravated or ameliorated.

The new rates entail an average increase to the consumer of from 10 to 20 cents per thousand cubic feet, according to locality, based on operating costs. They are designed, of course, to compensate, in part, at least, the manufacturing and distributing company for the enormous advances in the cost of material and labor and the imposition of higher taxes. The largest increase in expenses has been due to the high cost of fuel oil. The company will consume in its gas department during the year 1918 approximately 2,000,000 barrrels of oil. The price of oil to it in September, 1916, was 681/2 cents per barrel. This price has, step by step, been increased until the company is now compelled to

pay \$1.62 per barrel, or a raise in price of 93½ cents per barrel, making an increase in the cost of making gas due to the higher price of oil of \$1,870,000 per annum.

The press of the State, for the most part, has publicly recognized the necessity for the rate increase. The San Francisco *Chronicle*, in its issue of June 6th, commented thus:

Our Railroad Commission as now constituted has shown itself to be eminently a fair tribunal. While probing mercilessly into equivocal practices of corporate management and compelling the companies and not the public to bear the cost of grossly bad judgment or extravagance, it has not hesitated, on the other hand, to allow increases of rates when necessary to afford reasonable returns on money devoted with reasonably good judgment to public use.

Corporations are feeling the increased cost of living as well as the rest of us.

The Oakland *Enquirer* of June 11th had this to say:

The recent decision of the Railroad Commission . . . is evidence of the importance of this Commission not only for the protection of the people but for the safeguarding of the various corporations whose stock is held largely by small investors. . . . The old-time policy of kicking a corporation when it is down has been replaced by a saner view of its relation to the general welfare of the country.

The press, however, has not set forth as fully as it might have done the careful and thoughtful analysis made by the Commission showing the conditions confronting this and other utilities, and pointing out the urgent necessity of granting relief from burdens thrown upon utilities in spite of their efforts to ward them off. The result generally, has been given the public, but, in our judgment, there is matter of great public importance in all that led up to that result. For that reason we desire at this time to call the attention of our readers to the following excerpts from the written opinion of the Commission:

There is here presented an emergency in the financial condition of the company. The marked and sudden increases in the costs of producing and distributing gas have resulted in such a diminution of the net income of the company as to seriously embarrass it unless relief is had through an increase of rates. These increases in costs have been wholly beyond the control of the company.

The principal item is oil used in the manufacture of gas. The price of this commodity is unregulated and apparently advances in price are made at the option of the large oil producers. These large producers will make no contracts at fixed prices for oil; hence gas companies such as applicant are unable to avoid paying whatever price is demanded.

This oil is absolutely essential to the manufacture of gas and as the producers of the oil increase their price, gas companies must either suffer the loss caused thereby or rates paid by consumers of gas must be

increased.

The gas companies cannot absorb this extra cost and remain sound financial institutions capable of properly serving the public. Therefore this Commission has no choice other than to place this additional

burden upon consumers.

We suggest that while it is now possible to increase rates to take care of the mounting costs of producing gas and still fix rates which are possible for consumers to pay and continue the use of gas, nevertheless it is easily possible that unless steps be taken to regulate the price of oil we may be confronted with a condition where gas rates can no longer be substantially increased and the companies will be left in a condition of serious financial jeopardy.

Wages of employees have been increased and may be increased still further. This is to be expected because the cost of living has increased to such a marked extent that the managements of utility companies cannot and should not refuse reasonable increases of wages to meet living conditions, as well as to meet com-

petitive labor conditions.

The cost of practically all materials used in the manufacture and distribution of gas have increased and there is no assurance that still further increases will not be made.

The above considerations clearly establish this application as an emer-

gency proceeding. The war has produced abnormal business conditions which affect the business of producing and distributing gas as it has affected all other business. Entirely aside from the question of justice and fairness to the owners of these utility properties, it is seriously to be considered that, unless the public utility companies are maintained in a reasonably sound financial condition, they will no longer be able to serve the public efficiently, as it is a demonstrated fact that a weak and staggering company is incapable of producing good service.

Furthermore, it is not only sound public policy for regulatory bodies, but is the emphatically declared policy of the Federal Administration that as far as possible business institutions be not allowed to go into bankruptcy, thus seriously disturbing the financial fabric of the country.

The President of the United States, the Secretary of the Treasury, and the Comptroller of the Currency have each spoken clearly and definitely on this subject, and we believe that this Commission, having ample information, should without hesitation place utility rates on such a basis as to properly safeguard the financial stability of public utility companies that they may not fail in their service to the public and become a menace to the finances of the country, having in mind, of course, the reasonable capitalization of com-

panies.

Having in mind these considerations, we have in this proceeding established what may be called for this purpose the normal rates and have imposed thereon a distinct and separate surcharge. This surcharge represents as nearly as may be the abnormally increased costs of operation. This will permit from time to time, as it may become necessary, either the decrease or increase of this surcharge to meet conditions as they arise. If costs increase this may be reflected in a larger surcharge. If, on the other hand, costs decrease this likewise may be reflected in a decrease of the surcharge. By this method we believe there is established a flexible scheme for promptly meeting changing conditions of cost without the necessity of constantly changing all of the rates.

Tidings From Territorial Districts

Alameda County District

The boys are now writing us from the trenches. The cold of winter has passed, the fruit trees are bursting into bloom, and sunny France in its beauty of spring makes the boys more than ever homesick for good old California. But the duty before them is their prevailing thought; no California for them until the foe is crushed. Fear which first grasped their hearts upon entering the field has passed away. Every minute, in action or off duty, is full of interest.

One of the boys has been over the top already doing some work. Here's his

story:

"It is a thrilling feeling. At first one feels shaky, then comes the feeling 'it must be done,' and that is all there is to it. First they got up on the parapet for about five minutes—it was night—when suddenly up went a star shell from the foe. All the boys fell to the earth like sacks of wheat. After the light went out, then the foe turned on a machine gun. All you could hear was 'zing,' 'zing,' 'zing,' over your head. The first gas attack was announced by sounding an Everybody began getting their masks on and it seemed like an hour doing it, the rush was so intense. Anyway there was plenty of time. The boys stay in pairs, relatively speaking. The companion is called a 'bunkie.' Well, the bunkie had his mask on first and somehow the other fellow said he was ready to cuddle up and die. However, a mask can be put on in six seconds and one has about fifteen minutes to do it in.'

One of the boys enclosed in his letter to his dad a couple of flowers from "No Man's Land." He asks that they be kept. The request is unnecessary; every memento, every letter is carefully treasured by the loved ones at home. One flower is a violet, the other he does not know its name. He says "This violet has a little history behind it, so don't lose it, Dad." We wonder what be the history; the sentiment.

Boys, our hearts go out to you.

High spots about gas.—The war is now using thirty-seven essentials which are by-products of the gas works. T. N. T., the high explosive, is a by-product in extracting dyestuff. T. N. T. does not deteriorate, can safely be stored. The Germans in consequence have been storing it for some forty years. Germany has been buying this from its dyemakers, which, being in the nature of a subsidy, shows now why German dyemakers have undersold the rest of the world. This is why English gas works could not compete and sold their products to Germany. One ton of coal will furnish material enough to dye three miles of cloth one yard wide. These interesting facts were culled from Mr. E. C. Jones' gas course for employees. He has always been a consistent gas man. We were, in consequence, somewhat shocked in his explanation of the gas purifiers. He said the compost had to be well tamped against the walls of the tank to prevent the gas short-circuiting up the sides. In other words, Mr. Jones explained gas by terms of its younger sister, electricity.

Some contribution.—Four hundred and eighty-five employees of Alameda District contributed \$1935 to the second Red Cross fund. This is equal to seven days' pay for each employee now in service. This district has sixty-eight men enlisted.

The first day the drive started a laborer, who had just gone to work that morning, asked to sign up to contribute a day's pay. He overheard what was being done and generously donated his first day's work with the company to the big cause.

Jars inscribed "Pennies for the Red Cross" are kept at our cash windows where consumers pay their bills. These jars receive as much as fifty dollars in a single day. The main office at Thirteenth and Clay has given more to the Red Cross through these jars than any concern in Oakland, excepting the Southern Pacific Company, Creek Route.

Wednesday, May 29th, the Oakland Auditorium held a big patriotic rally for men and called it a "Trench Lunch." Some firms closed from noon until 2 p. m. while other firms excused the men employees. Our main office at Thirteenth

and Clay streets, and, also, the Berkeley office were run entirely by the women clerks. The girls broke in quickly and got away with the task creditably. At Oakland Miss Hutchinson acted as district manager, Mrs. T. D. Ottman as assistant, another as Billy Kelly, Lee Price,

etc., as each post was filled.

Eighty men employees assembled at the main office promptly at noon when the procession started down the main street. The police department issued a special procession permit. A. U. Brandt acted as captain, H. T. Bennett and W. L. Price as lieutenants, with Roy Crossman as corporal. The balance acted as privates. A row about started when Corporal Crossman undertook to tell Captain Brandt where to march. The procession attracted attention and called forth applause en route.

Miss Mabel V. Littell, Addressograph Department, Oakland, and Corporal Sherman E. Phillips, Company G, 13th U. S. Infantry, were married June 7, 1918.

Ray Biven says a Great War Ideal is raising vegetables to look like pictures on the seed envelope.

COMMUNIQUE.

Marysville District

Yuba and Sutter counties have gone over the top in the Third Liberty Loan drive, according to announcement by Chairman H. G. Cave and the executive committee, with a total subscription for the two counties of about \$1,000,000.

Announcement has been made that the Gridley rice mill is to be enlarged. Rosenberg Brothers and Company, owners of the mill, have decided to ge extensively into the manufacture of rice flour there.

A new corporation to be known as the Marysville Rice Milling Company, to be organized by local capitalists and business men, is being promoted here by Sam Britton, rice and grain buyer of this

city.

Å new company will be organized with a capital stock of \$100,000 and several sites in this city for a rice mill are now under consideration. It may be possible for the company to secure the Sperry flour mills here. If this cannot be done a new mill will be erected at once. The mills will handle 300,000 bags of rice

each season and it will be one of the largest rice mills in the Sacramento Valley, employing about twenty men.

The rice acreage in Yuba and Sutter counties has been increased to such an extent during the past two years that a rice mill in Marysville to handle the crop is necessary, and it is for this reason that the organization of the company to build a mill is being perfected.

Sutter and Yuba counties are raising the biggest hay, grain and barley crops in the history of the district, and District No. 10 is the bulwark of the bumper crop so far as barley and hay are concerned.

The quality of production of Marysville industries was given another boost recently in the shipment of two hydraulic monitors to M. E. Heiser of the Black Opal Stores of Rockhampton, Queensland, Australia, for use by large mining interests there. The machinery was the work of the Empire foundry of this city.

The Oroville auto tourist park will be placed in good shape in the near future so as to have it ready for the summer tourists. The matter was fully discussed at a recent meeting of the Chamber of Commerce. Roy Andrews, chairman of the auto park committee, reported he had been over the ground with J. A. Huntington, and that it could be put in shape for \$300. The committee was authorized to raise the money by subscription. The idea met with hearty approval, and subscriptions already amount to enough to go forward with the work, so that the park is assured for this season.

E. C. Johnson.

Marin District

On Friday evening, June 7th, the employees of Marin District held a farewell party for Mr. Wallace H. Foster, our district manager, who has left the service of the company for the period of the war to enter that of the U. S. Government under Mr. Hoover, head of the Food Administration. Mr. Foster has been assigned to the Marine Transportation Department, handling exports, including shipments for relief in Belgium.

Music and dancing were enjoyed by those present, after which refreshments were served. The employees presented Mr. Foster with a beautiful remembrance, and in his speech of acceptance Mr. Foster reviewed the history of Marin District and the many changes that have taken

place since he first took charge.

We are all very sorry, indeed, to lose Mr. Foster, as he has endeared himself to all with whom he came in contact. However, we are proud to know he has been chosen for the important work which he is to do, his successful handling of which is a foregone conclusion.

H. G. RIDGWAY.

Colgate District

Colgate Power District boasts a woman accountant. Miss A. E. Maher is a young lady of experience in bookkeeping and matters of accounting and, in these times of war service, she is filling a man's job with accuracy and dispatch. She likes work and she likes life at Colgate power plant. Incidentally, she is a sister of Mrs. Miles Werry, wife of the manager of Colgate District.

The accompanying picture shows Miss Maher in mountain costume.

EDW. C. HUNT.

Solano District

A number of cities and towns have reported with considerable pride that they have doubled their Red Cross quota, but the little town of Dixon and vicinity nearly trebled its allotment.

Thirty-five hundred dollars was asked for, and something like \$10,000 was subscribed. On the day the campaign was launched, an auction was held and every one in the community was solicited to

put up something for sale. There certainly was a motley array of goods and chattels at the Dixon Driving Park, where the auction was held. There were pigs, chickens, sheep, horses, rabbits, hay, barley, fruit, vegetables, pies, cakes, honey, groceries, hardware, fancy work, and many other articles too numerous to mention. The sale started off with Walter Harris, Dixon's famous auctioneer, presiding. In his own inimitable way he soon had the crowd keyed up to concert pitch, and in a short time roosters old enough to vote sold as high as \$23. A 25-cent bunch



Miss A. E. Maher, accountant at Colgate.

of onions, beets and turnips sold for the sum of \$45.

The P. G. & E. boys' contribution comprised 200 pounds of beans, which were left over from those raised by them last year. These were done up in 10-pound packages, and sold for as high as \$13. The climax was capped when a beautiful box of cherries, donated by the famous Buck orchards of Vacaville, was put up for sale. The auctioneer held them up to view, and in the center was a red cross made of immense red cherries, surrounded by black cherries. The bidding started rather meticulously, but evidently the Red Cross appealed to the sentimental feelings of the crowd, and soon the bidding was fast and furious. The box was finally knocked down to Sheriff Mc-Donald for an even \$400. The entire sale on that day netted \$4200.

On the next Monday night at the regular Liberty League meeting, someone announced that Mr. Bassford, who owns large cherry orchards at Vacaville, was not going to be outdone by Mr. Buck and that he had sent a box of cherries to be auctioned off. So it was put up for sale, with Walter Harris again officiating. It was suggested that every bid be a subscription, whether it secured the box or not. This was agreed to by the crowd, and bidding started at \$10, with raises of \$10, \$5, \$2.50, etc. Then someone said, "Well, I've filled my hand and I think it's good for \$50." Instantly another remarked, "Well, I've got a straight flush, and I'll raise you a \$100." This started the poker spirit and things were waxed fast and furious. When a raise of \$100 or so was made, hats were flung in the

air, accompanied by yells, and pandemonium reigned. Finnally, when this little crowd of from seventy-five to one hundred men were "busted," and the subscriptions totaled, it was found that \$1235 had been raised.

With the enthusiasm of the community aroused to a white heat by these two sales, it was an easy matter for the Red Cross ladies to take additional subscriptions by solicitation for the balance of the \$10,000 odd dollars.

Taking it by and large, Dixon feels that "it has been going some."

C. E. SEDGWICK.

The following is from the Winters Ex-

press, issue of May 31st:

"Local Manager C. E. Wyatt of the Pacific Gas and Electric Company, with his able assistant, H. G. Connor, have been busy men the past few weeks installing pumping plants with electrical connections for the rice and alfalfa men in the sections north of town. They have put in four new plants, completely equipped, and have four more signed up. One of the plants they put in is to irrigate 320 acres of rice. That will be some water pumped. The convenience of the electrical service to those who have them already installed has already changed the shape of the owner's face from an upand-down oblong to a horizontal oval."

Concerning this Manager Sedgwick has

to say as follows:

"Three of the four plants mentioned comprise 40-h. p. motors and 10-inch pumps operating on wells. The fourth plant pumps from an irrigating ditch. All of these equipments were installed on account of notice being received from the ditch company early in the season that it could not guarantee more than two waterings this year. With 'Pacific Service' thus coming to the rescue, the production of a large quantity of food, which is so vital to this country and its allies at the present time, is assured."

Head Offices, San Francisco

One department that finds important work to do during these strenuous times is the Valuation Department, headed by Mr. W. G. Vincent, Jr., as valuation engineer.

The accompanying picture is of Mr. Vincent and his staff, taken on the roof of "Pacific Service" Building, 445 Sutter Street, San Francisco. Reading left to

right, the portraits are of Miss Ethel Heinerikson, Messrs. S. B. Shaw (now in the U. S. Navy), F. C. Piatt, E. A. Weymouth, R. D. Compton, W. G. Vincent, Jr., J. T. Ryan.

In addition to Mr. Shaw, Messrs. W. B. Mel, M. B. Mensing, W. D. Sultan and G. M. Thomas have gone from the Valuation Department to join the colors, while Mr. Wm. Evans is engaged in the shipbuilding branch of war activity.

The following announcement comes from the chief engineer of

the Electric Department of "Pacific Service":

"We have in our line construction camp at Stockton at the present time only twenty-four men, and without any solicitation whatsoever these men donated to the cause of our boys at the front for Red Cross purposes \$120 in cash, making an average donation throughout the camp of \$5 each. I think that a showing like this is highly commendable and is worthy of special mention. P. M. DOWNING."

San Francisco District

AN ODE TO HARRY BOSTWICK, "THE REGULAR FELLER"

(Delivered at the regular weekly luncheon of the Electrical Development League in San Francisco, May 29th.)

Poets may sing of the heroes of old, Maidens may dream of a love that is hold, Gourmants may sigh for the wine in the

cellar,

But give me the grip of a regular feller. At labor he sticks from morning 'til night, The task may be humble, he does what is right.

His children must live, his wife shall

want never,

So long as they trust to the regular feller. Warriors are bred from the harsh womb of war.

Statesmen are made by a trick of the law, Genius and talent, bless some men together,

But the world is shoved on by the regular feller.

When this little round earth stops rolling in space

And the end is in sight for the whole human race,

I will wager a name near the top of Job's ledger

Will be our friend Harry, the regular feller. ALBERT H. ELLIOT.



Valuation Engineer Vincent and his staff.

"Pacific Service" Roll of Honor



Employees Who Have Entered the Service of the United States

REVISED LIST AS OF JUNE 15th, 1918 482 Total Number

BOARD OF DIRECTORS-SAN FRANCISCO Livermore, Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Behrens, William Henry
Bohnert, Arthur M.
Bremer, Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Jesse Wilbert
Canfield, George Hathaway
Cass, Chester R.
de Fremery, Leon
Dunne, Edward Anthony
Dunton, Harold G.
Dyer, Fred E.
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L. Gray, E. L. Hammond, Everett E.

Hansen, Ernest Axel Hauck, Fred B. Hill, Crawford W. Hornberger, Cecil Louis Keesling, Hector Kiene, Joseph Klene, Joseph Koester, Frederick A. Lewis, Fred Chas. Lindblad, Wm. Nathone Lindstrom, W. J. McDermott, Louis Wm. Mel, Washington Bartlett Mei, Washington Bartlet Mensing, M. B. Monroe, Robert Ansley Murphy, Elmo Neil Nordling, Wm. Osborn, Norris Whitlock Parker, Charles G.

Regan, Arthur
Rossiter, Sidney Benjamin
Rubenstein, Frank Sam.
Schuster, John Clement
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Richerd Howard
Sultan, Walter D.
Terhell, Jacques
Thomas, G. M.
Watson, John
Wilkins, R.
*Wilhelm, Clarence
Williams, Leroy Carlisle
Wright, Ernest Marion

*Died of pneumonia while on active duty in France, January 23d, 1918

ALAMEDA COUNTY DISTRICT

Abernethy, Harry
Anderson, Harold M.
Barr, John Milton
Barrett, George
Belford, William
Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cormack, Douglas Leslie
Currier, J.
Duceo, Daniel
Deuschle, Fred W.
Dupuoy, Max
Erickson, William
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Gray, Earl D. Gay, Earl D.

Hansen, Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hoffman, E. J.
Hunt, Malcolm Lloyd
Jacobs, Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Ivor
Klinefelter, Sam.
Knopla, Charles
Knott, Chas. E.
Larue, Chester Walton
Longo, Michael
Luce, George L.
Maslin, Francis Irwin
Massoni, Dante
McKenzie, Malcolm M.
Mills, Leon A.
Morrill, Lloyd M.
Mosher, James Nelson Hansen, Hans J. Mosher, James Nelson Oswald, James Parsons, James

Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Prefontaine, George J.
Price, Chalmers G.
Proto, Charles
Pullen, R. A.
Rowe, John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Horace Earl
Sibbett, J. E., Jr.
Shuman, D. L.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N. Skogund, Emer Smith, Stuart N. Stephens, Alden Raymond Thompson, Clark C. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

CHICO DISTRICT COLGATE DISTRICT

CONTRA COSTA DISTRICT

DE SABLA DISTRICT

Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

Knight, Remi Chabot Matheron, Frank Mellerup, Fred H.

Johnson, Samuel T. Lohse, Marcel P.

Curtis, Ray E.

Truitt, James O.

Andrews, Crist C. Halc, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Hinds, Perry Mare

Altpeter, Chas. E. Compton, John A.

Britton, Emmet Nicholson Hager, George W.

Drendell, Paul Ferrari, Clyde Getchel, Clyde

James, Ed. Leonard, Arthur L. Leonard, Ed. C.

Kass, Leo M. Kegg, Jesse Cecil

ELECTRA DISTRICT Martin, Jack H. McMilin, Robert S. Nuner, Glover J.

McGuffin, Alfred L. Smyth, Leslie Hall

Stone, Miles A. Wells, Shelley E.

Mess, Charles Theodor Netherton, Raymond Wayne Royster, Joseph Allen

DRUM DISTRICT

Meservey, Charles A. Pease, Howard

Beardon, Frank P.

Royat, Wm. Boston

Stewart, W. S. Zuccone, Sylvia

FRESNO DISTRICT

Brown, Ira A.
Butterworth, William Z.
Devlin, John A., Jr.
Downing, Robert W.
Krog, John P.

Maze, Norman E. Nair, Harold Newland, Fred Walton Patterson, A. Earl Stearns, O. J. Stearns, Ray Storm, Walter E. Thunberg, Frank W. Thunberg, Gus L.

Dallerup, Chas. De Lisle, Leon A. Emerald, Maurice A. MARIN DISTRICT Johansen, Clarence M. Langford, Clifford

Newhart, A. P. Thayer, E. H.

MARYSVILLE DISTRICT

Adams, James Albert Averhill, H. W. Berkey, Peter Vanest, Jr. Burns, Thomas F. Conger, L. N. Coyne, J. J., Jr. De Rosa, J. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E. Hubbard, H. W. Johnson, Dwight D. Johnson, Frank Koenig, George F. Madden, Thomas McCabe, Alexander McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Julius Sheldon, W. Frederick Schleck, C. J. Shearer, William

NAPA DISTRICT

Gash, Frank Taylor

Mayfield, James M.

Osborne, Butler J.

Snow, Wilbur Roland

NEVADA DISTRICT

Earl, George Snell, Verne C. Richards, James Taylor, Albert P. Taylor, Cary P.

PETALUMA DISTRICT Fairchilds, John H.

PLACER DISTRICT

Kent, James Cody Leary, Jerry

Sutcliffe, Harold T.

REDWOOD DISTRICT

Bryggman, Emil W. Budalich, RO Crad Casey, T. Gaussou, Jean Chase, H. A. Clausen, J. J. Cullen, John P.

Deloy, H. Fulton, L. J. Haines, G. V. Hiestand, C. R. Hocking, Thomas J. Hoffman, Andrew P. Jennings, Edward J. Johnson, Hjalmar Kirkpatrick, G. B. Laughlin, Burton E. Likely, R. D. Likely, H. E. Mengel, Henry Peers, G. A. Sampson, L. E. Sebben, J. E. Smith, R. F. Strofeld, George

SACRAMENTO DISTRICT

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
Brewster, G. V.
Busses, George D.
Cameron, John

Goyle, Wm. Doyle Daigle, John M. Dick, Silas S. France, Fred Rhodes Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan, Raymond M. Mathews, Maurice L.

Melby, John Miller, J. E. Mullen, Ira J. Newington, David O'Connor, Edward T. Olson, Albert Richeson, Merle C. Riggles, R. F. Roach, Martin L. Ross, Chas. Archie Ross, Harold Lee , Sanford, Walter W. Sartori, Adolph Sheehan, Parker J. Smith, Joseph Lee Smith, Myron M. Stiewer, Winlock W. Suggett, Archie Dean

SACRAMENTO SUPPLY DISTRICT

Derr, Harvey Dyer, John B.

Barriere, Ernest

Jones, Verne H. Kinz, William J. Koch, Carl McKenzie, Alfred

SAN FRANCISCO DISTRICT

AUDITING AND ACCOUNTING DEPARTMENT

Carew, Clement J.

Gilhuly, Aloysius M.

BOOKKEEPING DEPARTMENT

Arens, Frank Barker, Cecil B. Beach, Nelson James Bearwald, Joseph R. Bowers, Harold S. Francouer, Raymond J. Gibney, Walter Inteman, R. Jacobsen, Earl D. Keating, Arthur Edward Lindsey. Elroy M. Suters, F. X. Wilson, Herbert E.

COLLECTION DEPARTMENT

Oliver, Adrian Pierce Shea, Cornelius Thomas Sheehan, Peter Burnett

Collins Geo. Washington Fitzgerald, Paul

COMMERCIAL DEPARTMENT

Tracy, Grover Smith Van Zandt, Wynant Zimmerman, Elmer

Anderson, Berrien P. Browning, George E. Conlisk, Raimon Francis Fitzpatrick, Wm. Emmet Garthorne, George Edward Horsey, Joseph H.

SAN FRANCISCO DISTRICT-Concluded

ELECTRIC DEPARTMENT

Addleman, Thomas L.
Allen, Fred H.
Anderson, Lyle Z.
Altland, Comer A.
Barker, Guy A.
Beatie, Gerald
Biehl, P. F.
Burnett, Walter
Butler, Harry E.
Campbell, M. F.
Cook, Frank L.
Daley, Robert
Davidson, David
Dodge, Charles P.
Donovan, Patrick
D:ew, Harold
Durand, Milton J.

Eichbaum,
Chas. Williamson, Jr.
Estes, Melville N.
Fowler, E. H.
Gaston, J. R.
Gerber, Harold
Glasson, Lester G.
Griffin, John W.
Hagar, George H.
Hart, Grover C.
Haughy, Edward G.
Henion, Floyd
Hildebrand, Ernest
Hull, Ray L.
Hunnel, Bryan
Jackson George
Jacobs, Samuel Edward

Kennedy, Donald S.
Madden, Joseph J.
McDougall, Chas. A.
McHugh, Peter
Merkelbach, Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pringle, Alec.
Robbins, Chas. W.
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William

Seifkes, Lane F.
Shields, Garrison F.
Siggins, N. J.
Spandau, R. D.
Stobler, Adolph
Szczepanski, Edgar M.
Thompson, A. R.
Thompson, W. H.
Turner, John McBurney
Varney, K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

GAS DISTRIBUTION DEPARTMENT

Close, Wm. Lansing Glennon, Joseph D. Gowans, Robert B. Hansen, John T. Johnson, Albert

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice Kemnitzer, Mellwood Murphy, Edward R. Pape, William Frank Raspadori, Joseph

Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

GAS MANUFACTURING DEPARTMENT

Jones, Dwight Williams Lynch, John Joseph McCallum, E. A. McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

RECORDS DEPARTMENT

Hughes, Percy Anthony

McDonald, Wm. John

SAN FRANCISCO SUPPLY DISTRICT

Abercrombe, Donald Andresen, Carl Clark, William Corbett, Victor Elliott, Gerald Equi, John Lang, R. T. McNab, Hugh D. Merlinjones, Clarence Perassa, Louis Queirolo, Chas. Quigley, James L.

SAN JOAOUIN DISTRICT

Faight, Forrest W. Flint, Arthur P.

Hunt, Herbert Tevis Martin, David G. McIsaac, Dan Riley, Norman Sidney

SAN JOSE DISTRICT

Bailey, Sidney H.
Bigger, Clyde A.
Billard, Wm. F.
Branch, Ira H.
Brewer, Lyman E.
Brown, Henry Edward
Burns, Leo
Galdwell. Edward F.
Carroll, Louis

Charles, Eugene H.
Goyle, Dan K.
Erhentraut, Edwin Otis
Faulkner, Chas. C.
Fimau, Edward F.
Frederickson, J. C.
Frier, George S.
Hale, C. St. John
Hall, Evans E.

Harkness, T. J.
Jensen, Elmer D.
Johnson, Carl B.
Kiely, Wm. P., Jr.
MacGregor, Owen L.
McFarland, Julian
Menzel. Robert J.
Rowe, Ernest W.

Roy, Harvey Leon Singleton, Paul Sprung, Stanley W. Stojanovich, Tony Suess, Walter R. Tarp, James P. Terry, R. H. Wright, Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B.

Harris, Ray

Ross, Mervyn F.

SOLANO DISTRICT

Anderson, Frederick E.

Mix. Francis L.

Morgan, Mervin E.

VALLEJO DISTRICT
Argabrite, Walter N.

YOLO DISTRICT

Bischoff, O. E

Grandquist, K.

Howard, Everett J.

THE FOLLOWING EMPLOYEES HAVE ENLISTED BUT HAVE NOT AS YET BEEN CALLED TO THE COLORS

DISTRICT		NAME
San Francisco —	- General Offices	McDonald, Hayward C.
	Electric Department	Martin, William T.
SANTA ROSA		Short, Ralph
MARYSVILLE		Walker, Alec. R.



Westinghouse Type OA Watthour Meters



Give Maximum Sustained Accuracy

because they embody certain distinctive features, among which are:

The Double-Jewelled Ball Bearing supporting the main shaft.

The highly developed register, with its Slow-Speed Worm and Straight-Line Dial.

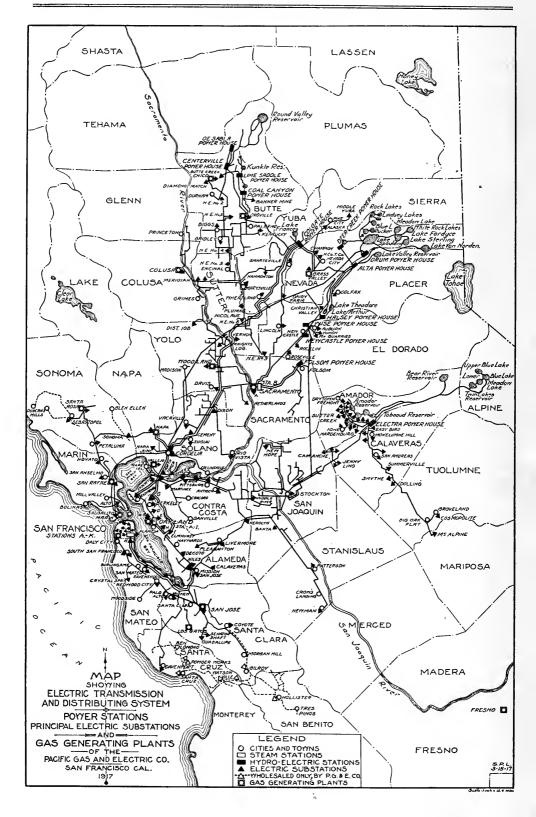
Correctly designed, and carefully treated permanent magnets.

Accurately proportioned *Electro-Magnet*, safeguarded against change.

Catalogue No. 3-A, gives full particulars.

Westinghouse Electric & Manufacturing Co.
EAST PITTSBURGH, PA.
SAN FRANCISCO OFFICE
L MONTGOMERY SI.

Vestinghouse



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	INI	DIRECTLY	TOTAL		
	No.	POPULATION	No.	Population	No.	POPULATION	
Electricity	128	1,210,830	48	132,825	176	1,343,655	
Gas	51	1,219,690	2	8,600	53	1,228,292	
Water (Domestic)	11	57,302	8	19,300	19	76,600	
Railway	1	76,000			1	76,000	

CITIES AND TOWNS SERVED BY COMPANY:

		CITIES AND IC	MINS S	ERVED BI COMI	MINI		
Place Po	pulation	Place Pop	ulation	Place Po	pulation	Place Pe	pulation
¹Alameda	30,000	El Verano	400	Mokelumnellill	300	² San Quentin	2,500
² Albany	2.300	*Emeryville	3.000	Morgan Hill	750	2San Rafael	6,000
Alvarado	700	Esparto	250	Mountain View	2,500	Santa Clara	6,000
Alviso	550	Fairfax	250	Mt. Eden	210	Santa Cruz	13,600
5-6Amador City	1,100	Fairfield	1.000	²Napa	6.500	² Santa Rosa	11.000
Angel Island	280	Fair Oaks	300	8-8Nevada City	2,900	Saratoga	300
Antioch	2.000	Felton	300	Newark	505	Sausalito	3,000
Aptos	300	Folsom	2.000	Newcastle	950	2Sebastopol	1.950
2Atherton	250	Forestville	225	Newman	1.200	Shellville	200
6-6Auburn	2,800	Fresno	48.867	Niles	1.000	Sheridan	250
² Barber	500	Gilroy	2.900	6Novato	400	Smartsville	300
2Belmont	375	Glen Ellen	900	2Oakland	225,000	Soquel	400
Belvedere	550	3-8Grass Valley	5,200	Oakley	200	Sonoma	1,290
Benicia	2,400	Gridley	1,800	*Occidental	600	2South San	1,290
Ben Lomond	800	Grimes	350	³Oroville	5.000	Francisco	3,750
² Berkeley	65,000	Groveland	250	Pacheco	250	2-7Stanford Uni-	3,730
Biggs	500	Guerneville	780	2-7Palo Alto	6,000	versity	2,600
Bolinas	200	Hammonton	500	Paradise	500	5-6Stockton	42,000
Broderick	600	² Hayward	4.000	Patterson	500	Suisun	800
² Burlingame	4.000	Hillsborough.	950	Penn Grove	300	Sunol	340
Campbell	700	6Hollister	2,500	⁵ Penryn	250	Sunnyvale	1.650
Capitola	275	6-6Ione	1.000	Perkins	250	Sutter City	250
Cement	1.000	lrvington	800	²Petaluma	7,500	6-8Sutter Creek	1.300
Centerville	850	6-8 Jackson	2.100	² Piedmont	3,500	Tiburon	350
² Chico	15,000	² Kentfield	500	Pike City	200	Tres Pinos	300
Colfax	500	Kenwood	200	Pinole	1.800	Vacaville	1,250
²Colma	1.800	Knights Land-	200	Pittsburg	6,000	2_6Vallejo	15,500
²Colusa	2,000	ing	400	Pleasanton	1,500	Vineburg	200
Concord	850	² Larkspur	2,000	Port Costa	1.000	Walnut Creek .	500
Cordelia	300	6-6Lincoln	1.500	2Redwood City.	4,200	Warm Springs.	200
Corte Madera.	350	Live Oak	300	2-6Richmond	16,500	Watsonville	6,000
2-6Cotati	200	Live Oak	2,500	Rio Vista	1.000	Wheatland	500
Covote	200	² Lomita Park	450	⁵ Rocklin	900	Winters	1.200
Crockett	3.000	Loomis	450	⁶ Rodeo	300	2Woodland	5,000
Crow's Landing	300	Los Altos	500	8-8Roseville	4,200	Woodside	225
² Daly City	5,500	Los Gatos	3.000	2Ross	900	Yolo	350
Danville	400	Madison	250	'Sacramento	76,000	²Yuba City	1,750
Davenport	300	Madison	500	San Andreas	750	i uba City,	1,750
Davis	1.700	Martinez	3,500	² San Anselmo	3,000	_	
Decoto	300	² Marysville	6,000	² San Bruno	1,500	Total Cities	
Dixon	1.200	Mayfield	1.100	San Francisco	580,000	and Towns.,!	.422.522
Drytown	225	² Menlo Park	1.100	2San Jose	45,000		
Duncan's Mills	200	Meridian	225	San Juan	550	Add Suburban	
Durham	300	² Millbrae	300	² San Leandro	5,000	Population	400,586
6-6Dutch Flat	750	Mills	350	² San Lorenzo	400	_	
Eldridge	500	Mill Valley	3.200	San Martin	200	_	
2-6El Cerrito	1.200	Milpitas	350	2San Mateo	6,000	Total Popula-	
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,823,108
Dimita	550	Mission Canjusc					

Unmarked—Electricity only.

Gas only.

Gas and Electricity.

Electricity and Water.
Gas, Elect. and St. Railways.
Electricity and Water.

Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	. 199,412
Number of Gas Consumers	
Number of Water Consumers	
Number of Steam Consumers	447
Total number of consumers	.459,696

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

EVERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in twenty-four investment centers (many of them having private wires to New York) are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

Boston, Mass. 10 State Street Albany, N Y. Ten Eyck Building BUFFALO, N. Y. Marine Bank Bldg. CLEVELAND, OHIO Guardian Building CINCINNATI, OHIO
FOURTH Natl. Bank Bldg.
DETROIT, MICH.
147 Griswold St.

PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA.
Farmers Bank Bldg.
WILKES-BARRE, PA.
Miners Bank Building BALTIMORE, MD.
Munsey Building
Washington, D. C.
741 15th Street, N.W. ATLANTA, GA.
Trust Co. of Ga. Bldg.

CHICAGO, ILL.
137 So. La Salle Street
St. LOUIS, Mo.
Bank of Commerce Bldg.
New Orleans, La.
301 Baronne Street
Kansas City, Mo.
Republic Building
MINNEAPOLIS MINN
SEATTLE, WASH.

San Francisco, Cal. 424 California Street PORTLAND, ORE. Railway Exchange Bldg. SEATTLE, WASH. Hoge Building Minneapolits, Minn.
McKnight Building
Denver, Colo.
First National Bank Bldg.

SEATTLE, WASH.
Hoge Building
London, E. C. 2 Eng.
36 Bishopsgate

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. ANDERSON HENRY E. BOTHIN JOHN A. BRITTON W. H. CROCKER
W. H. CROCKER F. G. DRUM

John S. Drum F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer NORMAN B. LIVERMORE JOHN D. MCKEE JOHN A. MCCANDLESS C. O. G. MILLER GEORGE K. WEEKS

OFFICERS

JOHN A. BRITTON A. F. HOCKENBEAMER													:			President Vice-President and General Manager Second Vice-President and Treasurer
D. II. FOOLE	•	٠	•	•	٠	٠	•	•	•	•	•	•	•	•	•	Secretary and Assistant Treasurer
																Assistant Treasurer Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM										Consulting Engineer
										Attorney
										Property Agent
J. P. Coghlan .										. Manager Claims Department
C. P. CUTTEN										Attorney, Rate Department
K. I. DAZEY										Manager of Collections
P. M. Downing .								\mathbf{C}	hi€	ef Engineer Electric Department
E. B. HENLEY .										. Manager Land Department
JNO. H. HUNT .										Purchasing Agent
J. P. JOLLYMAN .										Engineer Electrical Construction
E. C. Jones										Chief Engineer Gas Department
F. S. MYRTLE										Manager Publicity Department
L. H. NEWBERT .									M	Ianager Commercial Department
R. R. Reidford .										Acting Auditor
										Superintendent of Supplies
W. G. VINCENT, JE	₹.									Valuation Engineer

DISTRICT MANAGERS

DISTRICT HEADQUARTERS	MANAGER
ALAMEDA COUNTY Oakland	F. A. LEACH, JR.
Chico Chico	H. B. HERYFORD
COLGATE Colgate	
CONTRA COSTA Martinez	
De Sabla De Sabla	. I. B. Adams
Drum Colfax	. JAMES MARTIN
Electra Electra	
Fresno Fresno	
MARIN San Rafael	. W. H. FOSTER
Marysville Marysville	
Napa Napa	
NEVADA Nevada City	L. H. HARTSOCK
Petaluma Petaluma	
PLACER East Auburn	
Redwood City	
SACRAMENTO Sacramento	
SAN FRANCISCO San Francisco	
San Joaquin Stockton	
San Jose San Jose	
Santa Rosa Santa Rosa	
Solano Dixon	
Stanislaus Newman V	
Vallejo Vallejo	
Yolo Woodland	

Pacific Service Magazine

Volume X



Number 2

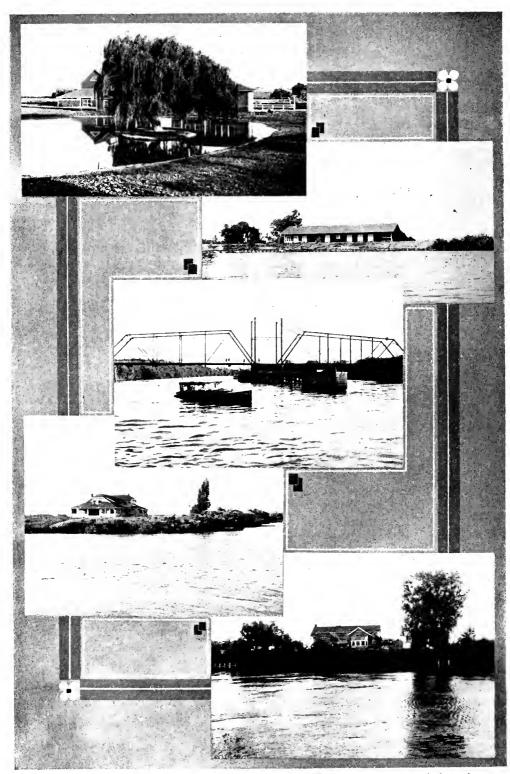
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for July, 1918

VIEWS OF THE RIVER COUNTRY NEAR STOCKTON.	Frontispie	ce
"PACIFIC SERVICE" IN THE DELTA REGION OF NORTHERN CALIFORNIA	F. S. Myrtle	35
A MESSAGE TO THE BOYS IN THE SERVICE	J. A. Britton	47
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION		48
INDUSTRIAL DEVELOPMENT ALONG OAK- LAND INNER HARBOR BELT-LINE RAIL- ROAD	J. Chas. Jordan .	53
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A. F. Hockenbeamer	54
EDITORIAL		56
TIDINGS FROM TERRITORIAL DISTRICTS.		58
"PACIFIC SERVICE" ROLL OF HONOR		62

Index to Advertisers

Chaplin-Fulton Mfg. Co	vı V İ ili i v	Pation Water Wheel Co. Sprague Meter Co. Standard Underground Cable Co. Steiger & Kerr Stove & Foundry Co. Welshach Company. Westinghouse Electric & Mfg. Co.	iv v ii vii
National City Company4th page cov Pacific Telephone and Telegraph Co	/er	Westinghouse Electric & Mfg. Co	



River views near Stockton, California. Reading left to right, from the top downward, these show:
(1) Duck pond on the Al Lindley farm, Rough and Ready Island; (2) residence of Mr. H. S.
Bates on Roberts Island; (3) wagon bridge over the San Joaquin River on the Borden
highway; (1) Stockton Golf and Country Club; (5) residence of Mr. Frank Guernsey,
Rough and Ready Island.

PACIFIC SERVICE MAGAZINE

Volume X JULY, 1918 Number 2

"Pacific Service" in the Delta Region of Central California

By FREDERICK S. MYRTLE

[For the historical data in the following article the writer is indebted to Mr George A. Atherton, general manager of California Delta Farms, Inc., a reclamation enterprise whose activities cover tracts of island territory aggregating upwards of 40,000 acres in extent.]

NCE a vast, inhospitable swamp, over which the turbulent flood-waters from the Sacramento River rushed at will; now a picturesque cluster of fertile, produce - yielding islands, contributing millions to the agricultural prosperity of the Golden State.

Well may it be said that the history of the development of the Delta lands of Central California reads like a romance. To quote Colonel John P. Irish, it is "a record of heroic struggle, tragedy, loss, courage and victory." But a few years ago the great majority of what are now landed estates under perfect cultivation were nothing but tule swamps of apparently no value except as breeding grounds for wild duck and other winged game; today they are wonderful tracts of prosperous farm land, crisscrossed by numerous channels or sloughs, off-shoots, variously, of the two great rivers which flow through that section of the country, namely, the Sacramento and the San Joaquin.

The entire Delta section occupies an area of over 300,000 acres.

As in most enterprises of an adventurous character, it was not, for the most part, given to the pioneers to reap the rich rewards of their energy and daring. The story of the great reclamation work that has made the city of Stockton the receiving and distributing center of a phenomenally productive territory furnishes more than one striking illustration of the part that chance has played in the scheme of life. More than one operator saw millions almost within his grasp only to have them swept away from him in a night. Those who came after were able to take up the work where it had been left and, profiting by the experiences of the past, carry it to a successful completion. Nine years have passed since the last disastrous flood plunged island after island under the waters from which, with the most painstaking industry and vast expenditures of money, they had been reclaimed. The last of these, Bouldin Island, submerged since 1907, is now being brought above the surface to add 6200 acres of perfect soil to this sum-total of agricultural wealth.

This improvement in things is due, in part, to better levee construction and the wonders wrought by the long-arm clamshell dredger; but, in the main, it owes its accomplishment to the widening of the Sacramento River at its mouth so that its flood-waters now flow into its own channel instead of, as formerly, overtaxing its neighbor, the San Joaquin, and tributary channels.

For the successful cultivation of these Delta lands hydro-electric power has been largely responsible. Only a few years ago the electric pump was a curiosity; today one company alone, the Pacific Gas and Electric Company, supplies "juice" to 6000 horsepower in installed motors on various tracts or islands.

The city of Stockton is about fifteen feet above the tide level of San Francisco Bay and the Delta region lies west of it. In its natural condition this entire terri-

tory is subject to overflow during the seasons of high water, and the greater portion of it is subject to overflow in its natural state from ordinary high tides. In order to bring it into its present state of successful cultivation it has been necessary to build levees around the different tracts and put in systems of drainage. This Delta region is cut up in every direction by rivers and sloughs, so that the reclamations have been made in a large number of units, the acreage of the unit varying from 300 to 500 acres as a minimum up to a maximum of 35,000 acres; the average unit, however, running from 4000 to 7000 acres.

The history of the reclamation of this territory goes back to the early sixties. At that time all of the land was subject to overflow to a greater or less extent, but because of the large storage area afforded for the surplus waters the depth of the overflow was comparatively small, and reclamation was begun on the higher portions of the territory, where, at that time, levees two to three feet high along the banks of the stream would keep out any ordinary overflow and enable the owners to crop the land to greater or less extent.

As time went one, however, and the storage areas were gradually encroached upon by the reclamationists, the flood heights increased so that the earlier levees

constructed became inadequate for their purposes and additions had to be made. This condition has gradually and steadily been accentuated as reclamation work progressed, until now, when practically all of the available land has been enclosed, the flood-water heights are very much above what they were when reclamation began. In the early history of reclamation, practically all of the levee work was done by hand work and by horse scrapers; a great deal of the attempted reclamation in the lower territory was done by Chinamen with wheelbarrows. There are still occasional evidences to be found of this old work and, in some instances, where large sloughs were dammed, it is a matter of wonder at the present time how so much could have been accomplished by hand work.

The greater portion of the soil is of peat formation, the peat varying in depth from one foot up to a maximum of about forty feet. In flood times the high waters reached a level probably less than two feet above the surface of the land, so it was thought by the early reclamationists that if they could put up small levees three to four feet high they would be able to keep out the water and cultivate the soil. Many thousands of acres in different tracts were attempted to be reclaimed in this way, and in the seventies hundreds of thousands of dollars were

spent in putting up levees and attempts made to cultivate the land behind them. But all such attempts proved failures. The peat was of such a porous character and of such a light formation (being of such lightness that it will float on water) that the weight of this small amount of material put on the land for such purposes had the effect of compressing the foundation on which it was laid, so that the



Typical pumping plant on the Rindge tract. 200-h. p. capacity.



Hemp ready for the mill. Rindge tract.

levee settled until it was impossible to keep it materially above the natural surface of the ground. Practically all of the reclamation undertaken under these conditions resulted in an absolute failure, and it was soon realized that different methods of reclamation must be adopted before any success could be made in farming these lands. As a result, in the early eighties, the clam-shell dredger came into existence as a practical proposition in this territory and a start was made in constructing levees with these machines.

Further difficulties, however, developed, as it was found that the additional weight of material put onto the peat soil

by the dredger only aggravated the settling tendency, so that the material disappeared about as rapidly as it was put up. As time went on, however, improvements were made in the clam-shell dredger until, about 1892, the improved clam-shell was developed into its present state of efficiency, the only material difference being that whereas in those days the clam-shells were built with 75- to 100-foot

booms, carrying 2-yard buckets, many are now built with 225-foot booms, carrying 6-vard buckets. With the advent of the improved clamshell (and, incidentally, with the growth of the State, a greater demand for good land) a great impetus was given to reclamation in the Delta territory, and since that time it has progressed so rapidly that practically all of the available land in that extensive

region is now well reclaimed and under cultivation.

In the earlier history of the reclamation no particular attention was paid to drainage; no canals were put in and in very few instances were even small ditches put in. Pumping plants did not exist, but with the advent of the dredgers and the resulting safer levees that were constructed, the reclamationists came to realize that it was quite as important to put in a drainage system as to construct a levee system. The necessity of this, however, was not forcibly driven home until well into the nineties, and although previous to that time some pumping plants had been installed—all of which,



Caterpillar carrying hemp to the mill.



Hemp mill on the Rindge tract.

by the way, were steam-driven—but very little was done toward the development of a canal and ditch system to supply water to the pump, and in no instance was anywhere near an adequate pumping capacity installed. In some of the earlier small reclamations, attempts were even made to pump the surplus water by means of windmills.

In these early days of reclamation, the only power that was available for pumping purposes was steam, and it was not until about 1900 that gas engines came to be used, and these, in the stage of their development at that time, were very unsatisfactory. The installation of a steam

plant was very expensive; fuel oil had not come into general use and the steaming was done with coal which had to be shipped and reshipped to get it to its destination; all of which made it very difficult and expensive to maintain satisfactory pumping facilities sufficient for the necessities of the reclamations.

The advent of electricity revolutionized the drainage system of the entire reclaimed territory. In 1906 the first electric pumping plant was installed at Middle River on the Old Jones tract, a reclamation of 6300 acres, belonging to the Rindge Land and Navigation Company. Power was furnished by the Pacific Gas and Electric Company. Mr. Lee A. Phillips, who at that time was manager for the Rindge Land and Navigation Company, keenly appreciated the need of better pumping facilities

in order to get best results from the land, and the first system of complete drainage on any reclamation in this territory, both in the way of ditches, canals and pumping machinery, was inaugurated by him on the Jones tract. This was the beginning, too, of the real successes in the reclamation of the lower lands. Larger levees were being constructed everywhere, and when it was found that electricity would insure efficient and ample pumping facilities the work of reclamation developed very rapidly. Since that time, practically no other power has been used for reclamation purposes anywhere in the Delta region.



Seed onions on the Rindge tract adjoining the superintendent's

Under the guiding hand of Mr. Lee A. Phillips there followed the reclamation of the New Jones tract, Rindge tract and Palm tract, all belonging to the Rindge Land and Navigation Company, and on which about 600 horsepower of electricity for pumping purposes was installed. About this same time Mr. Phillips began the reclamation of other properties in this territory, which, since that time, have been merged into a corporation known as California Delta Farms, Inc., and which reclamations consist, including two that have been sold since being reclaimed, of eleven units, including a total of 43,000 acres. On each one of these have been installed electric pumping plants, supplied with "Pacific Service" juice, in units from 100 h. p. to 200 h. p., with a total of 2125 horsepower. This has necessitated, on the part of the electric company, the construction of many miles of line, and, in order to give the best service, additional lines to complete circuits, so that continuous service can be insured.

In the earlier history of this electrical development, the electric company obtained some new experience in putting in pole lines, for it encountered difficulties, peculiar to that section of country, because of the uncertain character of the peat lands in maintaining the pole lines satisfactorily through the bad stresses

of weather; as the result of this experience, however, the company now maintains lines throughout this territory that give very sure service at all times.

Practically all reclamations in this territory now use electric power; those that had formerly steam power having practically abandoned it for electricity and having generally put in larger units. Generally speaking, 200 h.p. is the

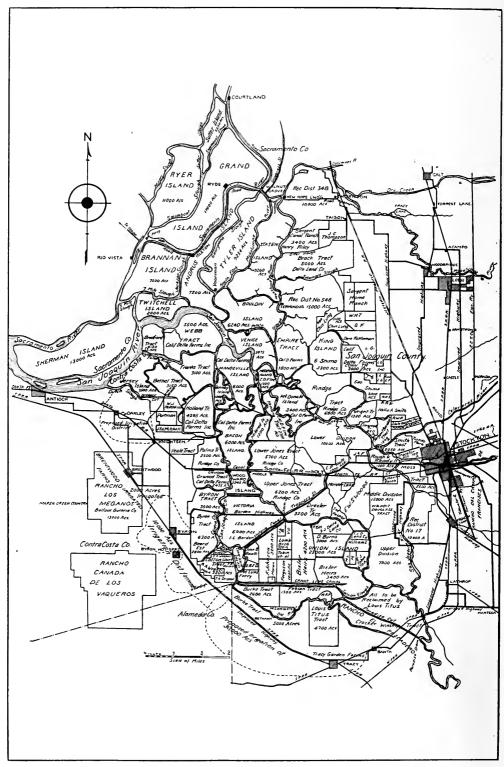
maximum unit put in, and this furnishes power to 36-inch pumps which have a capacity of about 50,000 gallons per minute. The lands in each of these reclamation units are practically all one level, there generally being less than two feet variation in the extreme of the high and low land on tracts containing even 4000 and 5000 acres; under these conditions, it is plain that there must be large ditches and canals to supply the water to pumps of this capacity; therefore, the main drainage canals are constructed from twenty to twenty-five feet wide with numerous laterals of three and four feet in width.

This reclamation development, the success of which has been very largely contributed to by the use of electric power for drainage, has opened up this immense territory, which contains as rich land as exists anywhere in the world, to the production of numerous crops of various kinds, the most important of which are potatoes, beans, onions, asparagus, hemp, celery, corn and barley.

The Joaquin, a monthly magazine published by the San Joaquin Valley Counties Association, in its issue of July, 1917, published an interesting interview with Mr. William H. Pile, one of the pioneer residents of the Delta region. Mr. Pile, who at the time of giving this interview was eighty-five years of age, had deserted



Fourteen-mile slough. Hemp mill on Rindge tract in the distance.



Map of the Delta region in San Joaquin and Contra Costa counties, California.

the river country for the mountains of Calaveras, but a visit to his old haunts had revived memories of the long ago and his story of the ante-reclamation days is worth reproducing here.

"In the fall of 1872," said Mr. Pile, "I went on a hunting and fishing trip down Middle River and stopped at Thomas Thompson's place on what is now the upper division of Roberts Island. Thompson is still living in the neighborhood of Lathrop. At that time the Delta was all under water and was nothing but a jungle. No reclamation work whatever had been done.

"Thompson had bought the land from the State, paying for it \$1 an acre and was making his living fishing and raising bees. There were no other residents whatever except a few settlers on the high strip of ground along the San Joaquin River side of the island. I took a spade and looked over the land and became so tremendously impressed with its virtue that I immediately reached the conclusion that if any way could be devised for its reclamation it would become the garden of California. I decided that I wanted the land and was so worked up about it that I sat up all night without sleep and before morning had made a bargain for it, agreeing to pay him \$16.50 an acre. In April, 1873, I hired a fleet of row boats and moved down to the land with my family. At that time the cleared ground amounted to scarcely the size of an ordinary city lot. There was a strip of high land about a rod wide along the bank of Middle River, and on this I began raising onions and berries and a little fruit.

"A year later J. P. Whitney came down in a boat to see me, bringing with him his engineer named McAfee to investigate the situation. We took a long trip in a boat as far as what is now Rough and Ready Island. Whitney had lent money to the original purchaser of the land, Mr. Roberts, for whom the island was named, and the latter had failed to reclaim his holdings in accordance with the stipulations under which he bought the land from the State. Accordingly, Whitney decided to take over what is now the upper division of Roberts Island, and by an act of the Legislature got an extension of five years. Whitney began reclamation work and we made an agreement whereby I undertook to build levees along my quarter of a mile of river front, and Whitney agreed to levee the remainder of the upper division. We spent about \$60,000 on this work. These levees were built with wheelbarrows handled by Chinese, although it was possible to use horses and scrapers on portions of the land. Sometimes there were as many as 300 or 400 Chinese on the island living

> in various camps. They were paid twelve and one-half cents a yard for their work. Whitney occasionally had considerable trouble with them. On my side of the island we built a 4-foot levee having a 12-foot base and measuring four feet across the top. Of course, where the land was lower larger levees were necessarv. Whitney bought a steamer called the 'Clara Crow' for handling the produce.



4x4-foot hand ditch. California Delta Farms.

"About 1878 Whitney interested in the land some Scotchmen who organized what was called the Glasgow Land Company, and they came over with John W. Farris, their engineer, to inspect the properties. At that time I had just raised a crop of 509 sacks of red onions from an acre of ground, and knowing about the big yield Whitney asked me to tell the Scotchmen just what the land could do.

As I talked Whitney jotted down some figures and readily estimated what a tremendous income the thousands of acres on the island would produce. As a result he made a deal with his prospects, and I believe that the yield from my acre of onions had more to do with consummating the sale than anything else, for it convinced the farmers of the exceptional fertility of the soil.

"Five or six years after I had purchased my land, I had it all under cultivation and bought another hundred acres, paying for it \$47.50 an acre. While at first I was able to raise nothing but garden truck, later on when the land was all



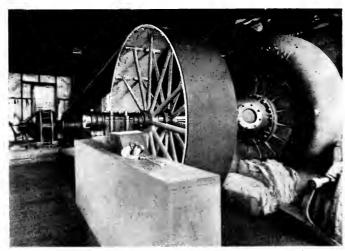
Dredge-cut ditch. California Delta Farms.

cleared I had it in wheat and barley and occasionally put in potatoes and corn. Still later I leased it to the Chinese, who always planted truck crops such as sweet potatoes, chicory, cucumbers, beans and potatoes.

"In these days of every comfort and convenience people have no conception of the crude surroundings which were our lot. For two years my wife never ate a meal outside of the house on our bank, and in that length of time she never saw another woman's face. It was twenty-two miles to Stockton by rowboat. I hired Chinese to haul the produce. They would leave about eleven o'clock

at night and get in by daylight.

"I built the first road across the upper division to connect with the cable ferry on the San Joaquin River just below what is now the Strecker ranch. I also helped to build the first school in about 1880 and was one of its trustees, while my daughter was one of the star pupils. Alexander T. Vogelsang, who has risen to a high place in the Federal service, was the first teacher, and Dr.



200-h. p. motor attached to pump of 50,000-gallons-per-minute capacity. California Delta Farms.



Looking from point on Disappointment Slough northwest across Empire tract.

Chas. R. Harry and Dr. Fred Baird also were early instructors in the school.

"I retained possession of my land until 1908, although I had not lived on it since 1895. The place is now owned by Mrs. J. W. T. Muhs, who lives on the land."

Under the personal guidance of Mr. J. H. Fagg, our company's power superintendent in the San Joaquin District, the writer recently had the pleasure of traveling over a considerable portion of this island territory. Our means of locomotion was a fast launch, one of the "Pacific Service" fleet, and for one whole long day we darted in and about the islands, now upon the broad waters of the river, now through some narrow slough, until, when nightfall compelled our return to Stockton, we felt we had obtained a fairly comprehensive idea of the agricultural situation in the Delta country.

One of our most interesting experiences was a visit to Rindge tract, where we saw hemp growing in the open, being harvested and conveyed to the mill by means of a Holt "caterpillar," the predecessor of the now famous British "tank." Mr. Carson C. Cook, the Rindge Company's general manager, happened to be there and he gave us some valuable information. He pointed to a 4000-acre field and told us it was the largest hemp

field in the world. The type of caterpillar in use at that time was not quite large enough to handle the immense crop and we were told that the International Harvester Company was manufacturing a new and larger machine. The Rindge Company operates three mills at the present time, each of which takes care of one ton of hemp a day, and it is putting in two more. Mr. Cook offerred the following

additional information regarding this industry:

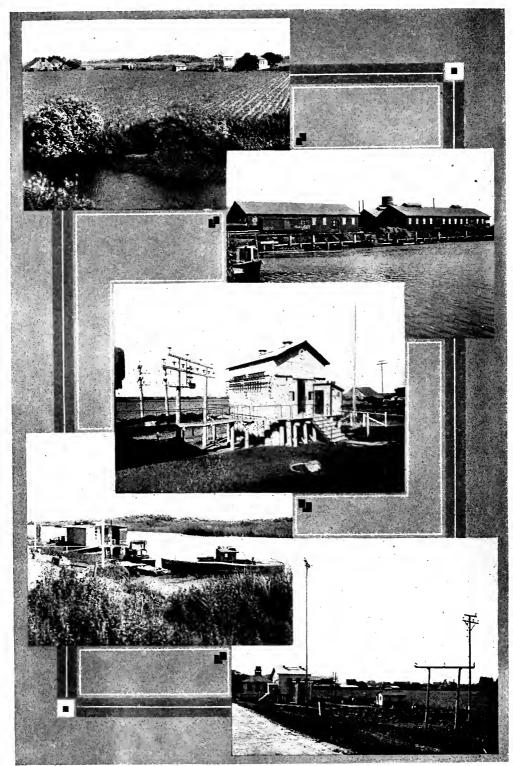
"We have 4000 acres of hemp this year grown for the fiber. This is American hemp and will yield several thousand tons of fiber.

"The seed is sown by a drill similar to a barley drill, and requires careful irrigation. It grows ordinarily to a height of six to twelve feet, but in some cases reaches a height on these rich peat lands of eighteen feet, but ten to twelve feet is more desirable. It is cut with a special reaper.

"If it is to be water-retted, it must be soaked in tanks of water before the action of the weather rets it. If it is to be weather-retted it is allowed to lie on the ground until the rain and dews degum it and loosen the bark from the stalk.

"The fiber is the bark of the American plant, while Manila hemp is from the inner part of the plant which is of the banana family. Sisal hemp is from a kind of century plant and is grown mostly in Yucatan, Mexico.

"After the weather has done the retting, the stalks are taken up and stood in shocks, when it is ready for the breaking or 'decorticating.' This is done in some places by hand, but here we do it with a machine; but there has not yet been produced a perfectly satisfactory



Views of Middle River, in the Delta region of Central California. The center picture shows the "Pacific Service" electric substation at Middle River. The picture at the top is of the substation from the Santa Fe railroad; next come, in order, the Rindge Company's potato flour mill; the "Pacific Service" fleet; road leading up to the substation.

machine, so far as I know. The retting and breaking are the difficult parts of the industry and many costly mistakes are made in the breaking.

"In this climate the retting is usually not done before January, but this depends upon when the rains come. The breaking is usually done the following summer. If the weather is damp, the stalks or 'straw' have to be put in a compartment and dried artificially to make the stalks brittle.

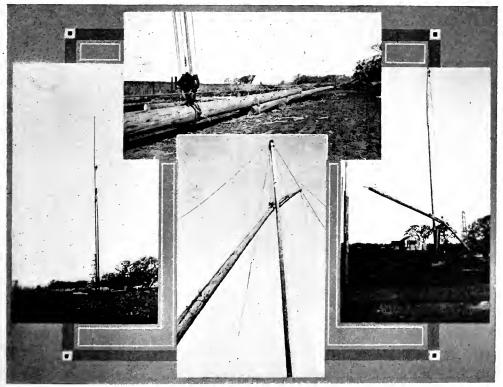
"It is usually broken and marketed during the year following the growing of the crop. It is therefore a long time before the farmer gets his money out of the crop. It also requires a good deal of costly machinery, which makes it an undesirable crop for the small farmer.

"The price of the fiber just now is high because of the war conditions. In normal times it is not a very profitable crop. In Kentucky the farmer grows a small acreage of hemp and does the breaking by hand when he has not much else to do, but before the war many farmers in Kentucky had abandoned hemp for tobacco."

The Rindge Company also operates a factory at Middle River which makes starch and potato flour from cull potatoes, which formerly were left to rot on the ground. This not only utilizes a waste product, but it removes these small potatoes from the ground. If left on the ground they are a detriment to any succeeding crops.

The same company has about 4000 acres planted to Indian corn or "maize." It was formerly thought that corn could not be grown here to advantage, but the corn grown on these lands is pronounced by millers and other experts of better quality than Eastern corn, and the yields are much heavier than in the corn belt of the Middle States.

Mr. J. M. Perry, chairman of the State Board of Agriculture, furnished an interesting addition to the writer's stock of



Views of a "Pacific Service" mast-raising job on the island territory.

information concerning his agricultural wonderland. In the Barnard tract, of four miles extent, where an enterprising Japanese had forty-five acres planted to potatoes, the gross returns from this last year averaged \$330 an acre, against which his rent was \$20 and cost of seed \$31. Allowing for other expenses, his operating cost probably did not exceed \$100 per acre, so that he had \$230 net.

"I paid \$65 an acre for my property," said Mr. Perry, "I get \$20 an acre cash rent for it."

Another interesting story concerns Bacon Island, where George Shima, known as the Japanese potato king, holds sway. The writer was informed that Shima had rented the island from the California Delta Farms Corporation for a term of five years. The first year he paid \$90,000 rent for the property, but did nothing with it, never even had it planted. Last year he sub-let to Chinese in 400-acre lots, he furnishing the seed and the land and receiving by way of rental forty-five per cent of the crop in the sack. The land yielded two hundred sacks to the acre, and out of this enterprise Shima received

anywhere from \$25,000 to \$45,000 a lot. He is credited with cleaning up a cold million. Stories like this are in constant circulation in and around Stockton.

The supply of electric energy that keeps these various interests going is derived mainly from the company's substation at Middle River, which is fed by high-tension lines from the Electra, Halsey and Wise plants. The substations at Stockton, Antioch and New Hope assist in making up the requisite amount of transformer capacity.

One of the accompanying illustrations pictures a "Pacific Service" mast-raising job in the island territory. Concerning this it may be worth while to state that an unusually long pole is required on overhead river crossings in order to comply with War Department regulations. At the point where the views were taken the men had to clear high-water mark, which was set 19½ feet above the surrounding land level, 110 feet. The length of span between masts is 1000 teet.

The following table is of the power consumers supplied by "Pacific Service" in the San Joaquin Delta:

OWNERS TRACT OR ISLAND MOTORS TOTAL ACRES California Delta Farms Company Cohen Tract 150 h. p. 3,000 California Delta Farms Company Empire Tract 200 h. p. 5,400 California Delta Farms Company McDonald Island 150 h. p. 1,202 California Delta Farms Company Mandeville Island 200 h. p. 6,600 California Delta Farms Company Bacon Island 200 h. p. 6,600 California Delta Farms Company Bacon Island 200 h. p. 4,295 California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 6,200 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 5,500 California Delta Farms Company Orwood Tract 150 h. p. 2,500				
California Delta Farms Company Empire Tract 200 h. p. 3,800 California Delta Farms Company McDonald Island 150 h. p. 1,202 California Delta Farms Company Mandeville Island 200 h. p. 5,438 California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 5,550 California Delta Farms Company Webb Tract 200 h. p. 5,550 California Delta Farms Company Webb Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 6,200 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Palm Tract 150 h. p. 6,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 150 h. p. 1,	•		MOTORS TOT	AL ACRES
California Delta Farms Company Empire Tract 200 h. p. 3,800 California Delta Farms Company McDonald Island 150 h. p. 1,202 California Delta Farms Company Mandeville Island 200 h. p. 5,438 California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 5,550 California Delta Farms Company Webb Tract 200 h. p. 5,550 California Delta Farms Company Webb Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 5,550 California Delta Farms Company Orwood Tract 200 h. p. 6,200 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Palm Tract 150 h. p. 6,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 150 h. p. 1,	California Delta Farms Company	Cohen Tract	150 h. p	. 3,000
California Delta Farms Company McDonald Island 200 h. p. 5,400 California Delta Farms Company Mandeville Island 200 h. p. 5,438 California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 4,295 California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Lower Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,200 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 3,300 George Shima King Island <td>California Delta Farms Company</td> <td>Empire Tract</td> <td></td> <td></td>	California Delta Farms Company	Empire Tract		
California Delta Farms Company Medford Island 150 h. p. 1,202 California Delta Farms Company Mandeville Island 200 h. p. 6,000 California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Palm Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Palm Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (L	California Delta Farms Company	McDonald Island		
California Delta Farms Company Mandeville Island 200 h. p. 5,438 California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 5,500 California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Palm Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lowr Division) 50, 75, 150 and 150 h. p. 10,000 George Shima King Island 200 h. p. 3,300 George Shima King Island 50 h. p.	California Delta Farms Company	Medford Island		
California Delta Farms Company Bacon Island 200 h. p. 6,000 California Delta Farms Company Holland Tract 200 h. p. 4,225 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Uper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Lower Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Palm Tract 150 h. p. 2,500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 10,500 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 2,500 Frank Boggs, et al. Boggs Tract <td>California Delta Farms Company</td> <td>Mandeville Island</td> <td></td> <td></td>	California Delta Farms Company	Mandeville Island		
California Delta Farms Company Holland Tract 200 h. p. 4,295 California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Palm Tract 150 h. p. 2,500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima King Island 200 h. p. 3,300 Frank Boggs, et al. Boggs Tract 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 R. Smith Smith Tract 75 h. p. 1,280 <	California Delta Farms Company	Bacon Island		
California Delta Farms Company Webb Tract 200 h. p. 5,500 California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Palm Tract 150 h. p. 2,500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 15,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 2,500 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank So, Drum. Staten Island 75 and 250 h. p. 2,200 R. Smith Smith Tract 75 h. p.	California Delta Farms Company	Holland Tract		
California Delta Farms Company Orwood Tract 200 h. p. 2,475 Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Lower Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Palm Tract 150 h. p. 2,500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 548 New Hope 30, 30, 75 and 75 h. p. 15,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 12,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 1,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 1,200 Frank Boggs, et al. Bogs, et al. 50 h. p. 1,200 <td>California Delta Farms Company</td> <td>Webb Tract</td> <td></td> <td></td>	California Delta Farms Company	Webb Tract		
Rindge Land and Navigation Co. Upper Jones Tract 150 h. p. 6,200 Rindge Land and Navigation Co. Lower Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 2,500 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. Smith Smith Tract 75 h. p. 1280 Stockton Development Co. Weber Tract 50 h. p. 3,100	California Delta Farms Company	Orwood Tract		
Rindge Land and Navigation Co. Lower Jones Tract 150 h. p. 5,800 Rindge Land and Navigation Co. Rindge Tract 150 h. p. 2,500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 2,000 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum. Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 Jo	Rindge Land and Vavigation Co	Unner Jones Treet		
Rindge Land and Navigation Co. Palm Tract 150 h. p. 2500 Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,900 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 3,100 Franks Reclamation District	Rindge Land and Vavigation Co.	Lower Iones Tract		
Rindge Land and Navigation Co. Rindge Tract 200 h. p. 6,800 Reclamation District No. 340 By ron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Franks Reclamation District	Rindge Land and Navigation Co	Polm Tract		
Reclamation District No. 800 Byron Tract 75 h. p. 3,500 Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung Tract	Rindge Land and Navigation Co	Rindge Treet		
Reclamation District No. 348 New Hope 30, 30, 75 and 75 h. p. 1,000 Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 75 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Franksenheimer Bros. et al. Brack Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodwa	Peolemetian District No. 900	Bynen Treet		
Reclamation District No. 548 Terminous Tract 150 and 150 h. p. 15,000 Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10,500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward Tract 75 and 75 h. p.	Reclamation District No. 800	You: Hone		
Reclamation District No. 684 Roberts Island (Lower Division) 50, 75, 150 and 150 h. p. 10500 George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Bogs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Franks Reclamation District Franks Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75,	Peelemetion District No. 548	Tomminana Tuest		
George Shima King Island 200 h. p. 3,300 George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,125 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200	Reclamation District No. 548	Pelant Island (I		
George Shima Wagner Tract 150 h. p. 2,000 Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 </td <td>Cooper China</td> <td>Roberts Island (Lower Division)</td> <td></td> <td></td>	Cooper China	Roberts Island (Lower Division)		
Lindley and Guernsey Rough and Ready Island 50 h. p. 1,200 Frank Boggs, et al. Boggs Tract 50 h. p. 2,500 Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Franks Reclamation District Franks Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,440 Wright, et.al. Wright and Elmwood 50	George Shima	King Island		
Frank Boggs, et al. Boggs Tract 50 h. p. 2500 Frank G. Drum. Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Franks Reclamation District Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al Union Island 50 h. p. 2,400 Wright, et.al Wright and Elmwood 50 h. p. 2,140 <td>George Snima</td> <td>Wagner Tract</td> <td></td> <td></td>	George Snima	Wagner Tract		
Frank G. Drum Staten Island 75 and 250 h. p. 9,260 R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et.al. Wright and Elmwood 50 h. p. 2,140	Lindley and Guernsey	Rough and Ready Island		
R. R. Smith Smith Tract 75 h. p. 1,280 Stockton Development Co. Weber Tract 25 h. p. 750 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,440 Wright, et al. Wright and Elmwood 50 h. p. 2,140			50 h. p	2,500
Stockton Development Co. Weber Tract 25 h. p. 756 John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden. Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	Frank G. Drum	Staten Island		
John Grant Grant Tract 50 h. p. 420 Franks Reclamation District Franks Tract 150 h. p. 3,100 Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et al. Wright and Elmwood 50 h. p. 2,140	R. R. Smith	Smith Tract	75 h. p	. 1,280
John Grant Grant Tract 50 h. p. 420	Stockton Development Co	Weber Tract	25 h. p	. 750
Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?). Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden. Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	John Grant	Grant Tract	50 h. p	. 420
Frankenheimer Bros. et al. Brack Tract 50 and 200 h. p. 4,000 Chin Lung (?). Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden. Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	Franks Reclamation District	Franks Tract	150 h. p	. 3,100
Chin Lung (?) Chin Lung Tract 50 h. p. 964 Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et_al. Wright and Elmwood 50 h. p. 2,140	Frankenheimer Bros. ct al	Brack Tract		
Bradford Reclamation District Bradford Island 100 h. p. 2,120 Woodward-Wolf Woodward Tract 75 and 75 h. p. 2,245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Fliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et_al. Wright and Elmwood 50 h. p. 2,140	Chin Lung (?)	Chin Lung Tract	50 h. p	
Woodward-Wolf Woodward Tract 75 and 75 h. p. 2245 I. L. Borden Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	Bradford Reclamation District	Bradford Island	100 h. p	2.120
I. L. Borden. Victoria Island 75, 75, 75 and 50 h. p. 6,900 Eliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et_al. Wright and Elmwood 50 h. p. 2,140	Woodward-Wolf	Woodward Tract	75 and 75 h. p	2.245
Fliza Drexler Drexler Tract 25, 150 and 150 h. p. 3,200 Abner Weed Veale Tract 100 h. p. 1,700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	I. L. Borden	Victoria Island	75, 75, 75 and 50 h, p	6,900
Abner Weed Veale Tract 100 h. p. 1700 Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et al. Wright and Elmwood 50 h. p. 2,140	Eliza Drexler	Drexler Tract	25, 150 and 150 h. p.	3,200
Col. D. Burns, et. al. Union Island 50 h. p. 2,400 Wright, et. al. Wright and Elmwood 50 h. p. 2,140	Abner Weed	Veale Tract	100 h. p.	1,700
Wright, et al Wright and Elmwood 50 h. p 2,140	Col. D. Burns, et. al	Union Island		
	Wright, et al	Wright and Elmwood		
70 H. P	Buckley, Perry, et al	Sargent-Barnhardt		
				. 1,200

TOTAL.....

..... 5,860 h. p.

148,089

To the Former Employees of the Pacific Gas and Electric Company

AS WELL AS ALL OTHER GAS AND ELECTRIC MEN FROM CALIFORNIA IN THE SERVICE OF THE UNITED STATES

GREETINGS!

To those on the eve of departure overseas, and those already on the firing line, with the purpose in view of wresting from a power that is abusing it, its right from its announced point of view of dominating the world, may I convey my appreciation of the splendid spirit which has dominated men of public utility service who have almost without exception voluntarily offered themselves as a sacrifice to save our Nation?

You are fighting not only, as has been the common expression, to make the world safe to live in, and for the triumph of democracy, but, as this horrible war is day by day divulging, you are fighting for the preservation of the sanctity of homes and of women whose lives and virtue must be as dear to you as those of your own mothers, wives and sisters.

With the knowledge of the men of America, I have no doubt of the ultimate outcome. America is going to finally win this war, and while there must be looked forward to the severance of family ties and all the sorrows that go with war, I am sure that you will feel as I do—that no sacrifice is too great to accomplish the purpose for which we are fighting.

It is needless to say that my heart is with you in this undertaking, and in common with others who have to stay at home, we will try to bear our burdens in the same spirit of loyalty that I know you will bear yours.

Thei Prisident na General manager.

OUR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION



Unusual interest attached to the annual dinner of the Association, held on the evening of Thursday, June 20th, at the Palace Hotel, San Francisco. It was made the occasion of a patriotic celebration, so to speak, in honor of the United States as a leading participant in the great struggle for World Democracy and, in that connection, of the 482 stars on the "Pacific Service" flag that represented, at the time, our company's active contribution to the cause.

Four hundred men and women of "Pacific Service" gathered at the dining tables in the big ballroom of the hotel. The attendance on the part of the fair sex was larger than upon any previous occasion, and their smiling faces and pretty frocks brightened up the scene wonderfully. Mr. Chas. P. Cutten, of the Rate Department, presided and acted as toastmaster, Chairman Dazey of the "Pacific Service" Employees' Association modestly taking second place for this occasion. By his side at the speakers' table were Vice-President and General Manager John A. Britton, Second Vice-President and Treasurer A. F. Hockenbeamer, and several department heads. The place of honor, however, at the chairman's right hand was reserved for Professor Charles Mills Gayley, of the University of California, who had accepted an invitation to deliver his stirring address upon war conditions across the seas.

The menu was up to date and in every way satisfactory. The regular progamme of entertainment commenced, of course, with "The Star-Spangled Banner," followed by selections from "Pacific Service" Orchestra, composed entirely of company employees, under the direction of Messrs. L. A. Melbourne and Homer Keesling. The "Pacific Service" Chorus, forty strong, was led by Mr. Lowell Redfield. Three solosits led the chorus in patriotic selections, Miss Zita O'Connor in "The Long, Long Trail," Miss Elizabeth Kenzel in "Joan of Arc," and Miss Edith Heynemann in "Keep the Home Fires Burning." Another feature worthy of mention was the "Pacific Service" Quartette, composed of Messrs. John Gilbert. Dick Hunt, Frank Figone and James Lewis. Mr. Figone also contributed some solos which set forth his rich basso most strikingly. Last, but by no means least, came Miss Georgette L. Renault, a young woman employee of our company who is planning a professional career. Her rendition of two selections from "II Trovatore" delighted the gathering immensely and the climax was reached when Miss Renault gave the "Marseillaise," the entire assemblage joining in the refrain.

An item not announced on the programme but which, nevertheless, proved of sufficient interest was furnished by the appearance of Master Billie Pearce, an entertainer of extremely tender years, who presented a martial selection in costume with remarkable effect. Our own Sam Wardlaw appeared in this feature as "Uncle Sam." Little Phyllis Pearce, a sister of the child actor, rendered a flag dance in costume very prettily.

The entire programme of entertainment was in charge of Mr. B. J. Crowley, chairman of the Entertainment Committee.

Mr. Britton had to leave early to keep another engagement, but he found time to make an address to the crew of the good ship he has steered successfully for so many years; and as he looked around upon his audience his countenance shone with pride. He congratulated the members of the fair sex upon their presence and the men of "Pacific Service" upon having them there. He spoke of the patriotic work being undertaken in the various districts by those who have not been called upon to enter active service; he spoke of our service flag in tones of pride and joy. At the conclusion of his address Mr. Britton introduced Professor Gayley.

It must have been a revelation to those who had judged the war mainly from patriotic speeches and newspaper headlines to hear the learned Dean of the Faculty at the University of California gravely set forth the picture in its true colors.

"You are at the supreme crisis of your nation's history," he said in opening. "This is the hour of destiny; it is the hour of the Lord; the hour for His people to show they are worthy of all He has done for them." He went on to describe the real character of the Huns, painting them

in all their enormity of arrogance and brutality; "a nation of paranoiacs, swellheaded, fed up on a system of philosophy which teaches that they are the chosen people of the Lord," he called them. He added this warning, "If they should win this war the world would be a hell without hope."

The picture presented by Mr. Gayley was not without its bright side. He told his hearers that, in his judgment, victory was certain. He brought his audience to its feet when he declaimed: "We will win because we are in it; we must win, for we will to win. We will win this war which will forever cause war to cease."

At the conclusion of a discourse in which he took in the war in all its phases on all its fronts, Professor Gayley gave a few words of counsel to the men and women of "Pacific Service," as loyal citizens of the World Democracy that is to be. He suggested, as far as practicable, the universal adoption of the English language, to the utter extinction of the German. He advised compulsory military service for every citizen for a period of two years before casting his first vote. Most important of all, at this time, he suggested the abolition of political parties, urging that there be no party but the loyalist party at elections, and that the voter devote his energy, not to following party lines, but to the careful selection of the right candidates for office.

Senator Cutten acquitted himself in most creditable fashion, his introductions being brief and breezy. In every way, in fact, it was a most successful gathering and the "Pacific Service" bark is dispatched on her way for another twelvemonth with promise of fair weather.

Arrangements have been completed for the annual picnic to be held at Pinehurst, on the route of the Oakland, Antioch and Eastern Ry., in the hills back of Oakland, on Saturday afternoon and evening, July 20th. Messrs. B. J. Crowley and R. A. Gentis announce games, gate prizes, dancing, music by our own jazz band. We expect to give a full account of this in our next issue.

Negotiations are under way with the Young Women's Christian Association for the inauguration of gymnasium classes for our girl members. The company has arranged to take out memberships for all who care to join.

This is in line with the company's plan of making everything as comfortable as possible for the fair sex. As already announced, there is a comfortable lunch room at headquarters which is daily patronized, and it is proposed to add other comforts and some amusement features.

The next monthly meeting of the Association will be held on the evening of Tuesday, August 13th, in San Francisco, after which our regular programme of one meeting monthly on either side of the bay will be resumed.

There will also be an out-of-town meeting held some time in August, upon conclusion of the vacation period. The place of the meeting has not yet been definitely fixed but it is generally understood that Petaluma will be given preference over other candidates.

"Pacific Service" Employees' Eighth Annual Tennis Tournament

Our eighth annual handicap singles tennis tournament will be held this year in the latter half of August, probably on the tennis courts in Golden Gate Park, San Francisco. Information will be furnished later as to the exact time and place.

This tournament is open to all members of our Association who are in good standing. The winner will take possession of our handsome silver loving cup for the year 1918. This cup was won last year by Mr. R. A. Monroe of the Engineering Department, who is now in France with the American Expeditionary Forces. Any player who has not previously competed in these tournaments should state what experience he has had in tennis, also what club affiliations he may have, together with his ranking with such club. This in order that we may intelligently handicap all new players.

It should not make any difference how much of an amateur you are, as there will probably be somebody you can defeat. Entries should be in the hands of the Tennis Committee at least one week prior to holding this tournament.

Four valuable merchandise prizes will be given in addition to the much-prized loving cup. Tennis balls will be furnished free of charge by the committee.

All players should, from now until tournament time, be rounding into shape, as we understand there are several of our best players who are considerably over weight.

Very truly yours, E. E. Dodge, Chairman Tennis Committee.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

On the twelfth day of the present month Mr. John A. Britton received a dispatch from across the seas conveying the glad tidings that his son, Lieutenant Emmet N. Britton, detailed for duty in France as a "liaison" officer, had arrived safely "over there." The dispatch was of laconic brevity:

"Salubrious. Love."

The following is from a faithful member of the "Pacific Service" family:

Base Hospital No. 30, Am. Ex. Forces, A. P. O. No. 723, May 24, 1918.

Pacific Gas & Electric Co., 445 Sutter Street, San Francisco, California.

Gentlemen:—I have received your letter of April 10th and, also, Pacific Service Magazine as per my request, and wish to thank you for the same.

I have arrived safely over-seas and am enjoying my new surroundings very much as we are located in a very picturesque place. Our sleeping quarters and living conditions are very good.

Yours very truly,
JULIAN McFARLAND,
Q. M. Sgt. M. C.

Sergeant McFarland was an employee of "Pacific Service" in the San Jose District.

A. R. Stephens, formerly of the Distribution Department, Oakland, is now a student electrician at Mare Island. The Government is giving the boys a very thorough education in electricity. Stephens has already had ten weeks of hard work on radio and general electricity, which consists mostly of theory of direct current. He is now about to be introduced to alternating currents, after which his studies will include switchboards, instruments, armature winding for both motors and generators, and a thorough study of storage batteries. They also give the boys about a month of machine-shop practice, together with some work on steam engines. Altogether, it is an eightmonth course and the instructors are cramming them to the limit. Stephens says that they have eight hours of schooling practically every day. It is expected that these boys will qualify as second-class electricians and will be appointed to duty on submarines.

The Electric Distribution Department in Oakland received a letter from Lieutenant Charles C. Jensen, now at Taliaferro Field, Fort Worth. For two months past he has been assigned to duty instructing cadets in flying. Lieutenant Jensen expects to be sent to the Gunnery School after he is through instructing cadets. This is a three-weeks course and about sixty new students enter it every week. He writes:

"The boys had been getting into bad habits while on Solo, and when they were sent to this stage they used to wash out on an average one ship a day, but fortunately no one was ever seriously injured. Now before wet let them do this work alone, which consists of making 45-degree figure eights, and also in going

up about two thousand feet and spiraling into the field, there are three of us instructors who take them up for several hours and teach them how to do it properly. We get a new class every week; work starts at 5.45 every morning and lasts till noon. It's a long, hard day's work, but we find it pays, as since we started the system we have not had any crashes."

Sergeant Crawford C. Hill, D Company, Masonic Ambulance Corps, 91st Division, U. S. A. R., Camp Lewis, Wash. (Formerly of the Commercial Department.)

The following letter was received from John Equi by Mr. Patton of the San Francisco Supply Department. Any of us whose feet are itching to wear the uniform will get comfort out of John's encouraging estimate

of what the stay-at-homes are doing to help win the war.

"Your most welcome letter received and was well pleased to hear from you and about the boys.

"I am located somewhere in Scotland, but expect and wish soon to be in France. You must be kept rather busy with new quarters and hiring and training new men, but every bit helps, and the harder you all at home work the easier it will be for us over here. You can also feel you are all doing your share when you are working extra hard, for I know you would like to

I know you would like to be here if circumstances would permit you; but you can fight just as hard there as here. We are all cogs in the stupendous war machine, and it is up to every man to take care and try to make himself the finest metal in his own little performance, to help this, our machine, to prove the finest, and win as I am sure we will.

"It is nice when I can pick up a home paper now and then and see how hard you all are trying. We boys over here are happy and proud to think how wonderfully the people at home stand shoulder to shoulder with us and everyone doing his share."

The following letter was received from Lieutenant Grover C. Hart, now in France:

"I received your welcome letter a couple of days ago, and was glad to hear from you. I was sorry to hear that the old gang is busted up. I forget just when I wrote you the last time, and hardly know where to start in, but for the last two months I have been acting as an instructor to regular army field signal battalions. I finished one tour May 16th and having been here long enough to entitle me to seven days' leave I took it and went to Nice, down on the Mediterranean, and I will tell the world that I had the time of my life. You know I have been plugging pretty hard ever since last August and seven days' permission with nothing to do was like heaven.

"Nice is a beautiful place, full of flowers and the air full of perfume, the weather warm and mild and many congenial friends. I visited Monte Carlo and



Mervyn F. Ross, U. S. S. Nebraska, Atlantic Fleet. (Formerly of Santa Rosa District.)

Monaco, but did not stay. Army officers are not allowed to play at Monte Carlo at the present time. We were allowed seven days in Nice and it took two days to go and two to return, so that made eleven days. I also visited Marseilles for a few hours.

"On my return I found orders sending me to another battalion as an instructor. I don't like it at all, but try to do my best. What I long for is to get up on the front again where life is interesting. I suppose you read some very startling things over there, but never worry, as you

will see the Boche blow up like a punctured balloon one of these days. Believe me, Fritz never goes out of his way to meet a Yank, and we are all full of pep and long to come down to brass tacks with the Huns. There is a big battle raging now and, believe me, there will be some mourning in Germany, as they sacrifice poor old Fritz like he was a dog.

"P. S.—At present I am living in an old chateau which is over five hundred years old. It is furnished with ancient and beautiful beds, curtains, pictures and chairs. We have a billiard table and a piano, and the billiard room has several wild boar heads, deer horns and other trophies of the chase mounted on the walls; and in one of the drawers of an old table in the billiard room we found several dice, large and small, and bone counters used as chips. Evidently the old Count was some gamester in his day. Chessboards with ivory chessmen and lots of things which must have cost a lot of money and for which rich Americans paid large prices as antique relics before the war, are in this old chateau. It is surrounded by a big wall and in one corner an ancient tower in perfect state of preservation. We use the dining room for an officers' mess and twenty-one sit around the big old table quite easily. This is the best billet I have had in France and we expect to have a very good time here compared to our past experiencs. I had a motorcycle wreck May 5th, my birthday, and damaged my right shoulder, but it is about O. K. again now. The weather is fine here now, and my only regret is that I am not up at the front."

Corporal Carl Andresen writes from France to a friend in the San Francisco Supply Department and desires to be remembered to all his friends at the office and elsewhere. He says that the Boche has learned that the Americans never sleep, and so far as he has been able to observe he thinks the boys are living up to their reputation. At least, the Boches have never caught them asleep. Carl also has the following message for all the boys and girls who are socially inclined:

"One thing that I've learnt since we are up here, is

four new dances, such as the States will have to become acquainted with after the soldiers get back. These are the 'Shrapnel Shuffle,' the 'Grenade Dip,' the 'Cannon Ball Glide' and the 'Pick and Shovel Drag,' which are executed to two new tunes (to us new-timers), the 'Mustard Gas Rag' and 'The Whistle Through the Air.'"

Mr. N. J. Hullin, general superintendent Railway Department, Sacramento District, received a very interesting letter from Private A. D. Suggett at Camp Lewis. Mr. Suggett sent in his picture to Mr. Britton's office as requested, and having had the opportunity to visit Seattle on leave of absence, he proves to Mr. Hullin that soldiering does not prevent him from taking a lively interest in street railway matters. Like all the boys he has a soldierly pride in the big camp where he lives.

Perry M. Hinds, formerly of Contra Costa District, writes from Camp Morse, Texas, of the strenuous course of military training that has been "dosed" out to him. He states that they take it for granted that he knows something about ordinary engineering work, so they are giving him special attention along military lines.

He was made a sergeant while at Camp Grant, which enabled him to enter the school at Camp Morse. He seems to think that there is quite a demand for men of engineering experience. He sends his best wishes to all friends in "Pacific Service."

Albert P. Taylor, formerly of the Nevada District, whote to Mr. Britton under



Lyman E. Brewer, machinist's mate, U. S. N. R. F., San Pedro, Cal. (Formerly of San Jose District.)

date of May 20th, stating that he had just received his Christmas package. Uncle Sam certainly does his duty in chasing these packages all over the United States and France, and finally landing them where they belong. Taylor writes as follows:

"The country is very beautiful at this time of the year, flowers in abundance, but I fail to see any large bydroelectric plants or high-tension power lines. I believe they are practically unknown, as it seems everything is done on the small scale, as is evident by the looks of some of the rail-

roads and rolling stock, which as a rule are very small; but the population of the country causes the towns to be more numerous and in that case I suppose the small railroad cars answer the best purpose.

"Each town or city has it individual lighting system, consisting of a small direct-current generator driven by a small 4-cycle gas engine, similar in type to a Ford engine. Both engine and generator are of French make."

Mr. Taylor left home on November 4th and arrived in France on December 31st, which is quick work.

A letter from Ralph O. Waltham, formerly of the Electric Distribution Department, Oakland, states that he was appointed second lieutenant in the Aviation Section on May 16th. He has now finished his training as a "bomber" and is at present taking a course in aerial gunnery.

Chairman Dazey has received a long, interesting letter from J. Watson, formerly of his office and now a student cook at Camp Lewis. He rejoices in the fact that his regiment, the 363d, is soon to leave for overseas and that he has passed all examinations and has been tagged "fit for service."

There is a possibility that he and some 160 other student cooks may come to the Presidio for a two months' course in the Baking School before going abroad. John will rank as a sergeant when he has graduated from Cooking School. He speaks of getting Pacific Service Magazine and of appreciating it very much.

Industrial Development Along Oakland's Inner Harbor Belt-Line Railroad

By J. CHARLES JORDAN, Alameda County District

NLY a few years ago the first transbay ferry route wound its way through the sloughs and mudflats of San Antonio Creek, which was then the winter home of thousands of wild ducks. Today these waters have been expanded and on these shores is located one of the greatest industrial centers of the Pacific Coast.

Early in the life of the city the Federal Government and the municipality realized the future that was in store for a city located on the mainland, directly opposite the Golden Gate and equally distant from the northernmost and southernmost boundaries of the great State of California, a location where transcontinental trains would meet ocean-going ships. The big Pacific and Oriental trade was open to that community.

Developments were started early and appropriations were made for dredging the San Antonio. Bulkheads were constructed and dredgings were thrown behind them, leaving a deep water channel along the entire waterfront. In the center of what was known as Brooklyn Basin dredgings were so deposited as to make an island of ninety acres, now the site of Government Island, the United States concrete-ship building plant.

With deep water, factories began to come and there were demands for further improvements, until today there is along Oakland's Inner Harbor fifteen miles of deep water which can readily accommodate the largest ocean-going vessels.

Every one of the three transcontinental railroads entering central California has terminal facilities on the Inner Harbor. The municipality has constructed modern quay walls, docks, warehouses and a belt-line railroad with spur-track facilities, giving the industrial plants and factories every modern shipping convenience. Oakland is the connecting link of the Occident and Orient.

Along the Inner Harbor belt-line railroad there are now located more than one hundred industrial plants and factories, employing over 24,000 people. That at least 40,000 will be added to the industrial population by January 1, 1919, is the conservative estimate made. The total new investments will represent \$80,000,000.

Among the great variety of articles manufactured there are certain lines along which development is particularly rapid. These are in the main connected with shipbuilding. With the outbreak of the war in 1914 Oakland's shipbuilding sprang into worldwide prominence. There were several plants located on the Inner Harbor, but with the unprecedented demand for boats this industry increased with unestimated proportions. Fourteen boat-building plants, among which is the largest in the world, now dot the shores.

World's records are being shattered at these plants. On July 4th five world's records were broken, as follows:

The laying of five keels for steel ships in one plant.

Launching of four steel vessels at one plant.

Launching of more tonnage than any other shipbuilding community in the world.

Launching of a 12,000-ton vessel constructed in forty-four days.

Leading the whole United States in launchings, both in tonnage and in numbers.

On that same Independence Day Oakland plants launched eight steel vessels. When one of these plants is in full operation, which will be about November 1st, there will be in the course of construction at that plant ten steel ships at one time.

"Pacific Service" plays an important part in the successful operation of this great industrial center. They are smokeless industries, all plants being electrically driven, and gas is the universal fuel. Many of the appliances constructed for the use of industrial gas have been installed. Contracts have been closed for service in these plants aggregating a monthly consumption of over 12,000,000 cubic feet of gas, which will aid in conserving fuel, releasing men, creating efficiency and speeding up industry.



The Financial Side of "Pacific Service"

BY A. F. HOCKENBEAMER

E present below preliminary income account statements, in condensed form, for the month of June, 1918, for the six months ended June 30th, 1918, and for the twelve months ended June 30th, 1918, contrasted with the same periods of the preceding year.

PRELIMINARY INCOME ACCOUNT

Month of June

	1918	1917	Increase	DECREASE
Expenses, including Taxes, Reserves for De-	\$ 1,860,815.21	, ,	· ·	
Preciation, etc	,	\$ 689,819.59	-	
ADD Profits on Merchandise Sales and other Miscellaneous Income	40,250.99	57,264.23		\$ 17,013.24
Total Net Income	\$ 783,781.56	\$ 747,083.82	\$ 36,697.74	
DEDUCTIONS: Bond or other Interest		15,426.41		\$ 6,457.23
Total Deductions				\$ 6,001.02

SIX MONTHS ENDED JUNE 30TH

	1918	1917	Increase	DECREASE
Gross Operating Revenue	\$10,610,305.80	\$9,810,427.87	\$ 799,877.93	
Expenses, including Taxes, Reserves for Depreciation, etc	6,881,918.44	6,029,876.15	852,042.29	
Net Earnings from Operation	\$ 3,728,387.36	\$3,780,551.72		\$ 52,164.36
ADD Profits on Merchandise Sales and other Miscellaneous Income		241,361.49		5,989.03
Total Net Income	\$ 3,963,759.82	\$4,021,913.21		\$ 58,153.39
DEDUCTIONS: Bond or other Interest	\$ 2,062,455.48 92,558.46 745,128.42	92,492.05	66.41	
Total DeductionsBalance	\$ 2,900,142.36 \$ 1,063,617.46	\$2,867,463.77 \$1,154,449.44	\$ 32,678.59	\$ 90,831.98

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED JUNE 30TH

	1918	1917	Increase	DECREASE
Expenses, including Taxes, Reserves for Depreciation, etc		11,537,399.56	\$ 1,528,834.33 2,169,333.44	
Add Profits on Merchandise Sales and other Miscellaneous Income	502,358.12			1,634.08 \$ 642,133.19
Apportionment Bond Discount and Expense Accrued Dividends on Preferred Stocks	1,487,991.29	179,088.50 1,431,994.17	6,028.42	
Balance	\$1,605,763.58	\$2,519,282.05		\$ 913,518.47

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF JUNE 30TH

June 30th	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	109,929	47,352	5,425		162,706
1908	124,592	56,746	5,690		187,028
1909	131,236	64,590	6,289		202,115
1910	141,998	75,205	6,914		224,117
1911	156,384	91,406	7,085	17	254,89 2
1912	183,667	106,218	7,686	160	297,731
1913	199,061	121,099	7,991	233	328,384
1914	211,132	137,916	8,873	307	358,228
1915	223,919	157,681	9,413	354	391,367
1916	226,537	170,086	9,911	381	406,915
1917	235,183	184,833	12,365	419	432,800
1918	247,220	200,615	12,924	447	461,206
ain in 11 years	137,291	1 5 3,263	7,499	447	298,500

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - EDITOR-IN-CHIEF
PREDERICK S. MYRTLE - MANAGING EDITOR
A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month.

Published by the
PACIFIC GAS AND ELECTRIC COMPANY
at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

JULY, 1918

No. 2

EDITORIAL

Public Service, a periodical dedicated to the dissemination of news concerning the public utilities of the country, both privately and governmentally owned, affirms that the California Railroad Commission is making a strong stand for high place among public regulators with a rational sense of their responsibility for keeping public utilities up to maximum efficiency, in accordance with the declaration of President Wilson that, as vital parts of the national war machinery, it is essential to the public welfare that they be permitted to maintain such efficiency.

This expression of favorable opinion was, of course, prompted by the recent decision of the Railroad Commission in the matter of the Pacific Gas and Electric Company's application for increased rates for gas service, in which decision the Commission not only granted increases but set forth in plain terms its reasons for so doing. That decision was commented upon in our last issue, and since that time its justice has hardly been questioned from any point of view. Comments, generally, have been favorable.

Now comes the Railroad Commission with another decision granting "Pacific Service" relief in the matter of its rates for electricity. In this the Commission affirms the schedule rates already on file and adds to these rates an emergency surcharge which varies in amount from one mill to one cent per kilowatt-hour according to quality of service rendered.

This new finding of the Commission invites editorial comment at this time in the desire to call public attention to the conditions which the rate-regulating body of the State finds confronting the power companies, and to meet which the companies have been compelled to apply for financial relief. For instance, the Commission enumerates the following factors contributing to the present emergency:

- 1. A general increase in all operating expenses, due to the rising price of material and the necessity for increasing wages paid to employees, both to meet the increased cost of living and to meet the higher wages paid in competitive industries.
- 2. A period of water shortage, resulting in a material reduction in the output of hydro-electric power plants and the consequent necessity for a greater production of electric energy by steam power.
- 3. Increases in the cost of oil used in steam power-plant operation, which would in itself increase the cost of power during a normal year but which in a year of reduced hydro-electric supply further adds to the cost of operation on account of the greater use of oil.
- 4. A curtailment in the use of electric energy for lighting purposes and a correspondent reduction of the company's income from this source, as a result of the so-called "Daylight Saving Act."
- 5. The necessity for the maintenance of the financial status of public utilities during the war period in order that they obtain the funds necessary to continued expansion of facilities.

The Commission, in its earlier decision already referred to, had set forth its views upon existing conditions, looking to the safeguarding of the California utilities during the war emergency. Affirming those views, the Commission proceeds to

deal with matters particularly concerning the electric industry. Notice is taken of the rise in the price of oil from 68½ cents to \$1.62 per barrel, and the company's estimates are taken as showing that the sales in electric energy in 1918 will call for an increase over 1917 of approximately 76,000,000 kilowatt-hours in the total energy required at the sources, which, under existing circumstances and conditions, can be supplied only by an enlarged production of energy in steam power plants. These deductions follow:

"To produce the energy required in steam power plants will necessitate the consumption of 1,454,610 barrels of oil, which, if purchased at the \$1.62 base price, will amount to an expense for oil alone of \$2,360,068. This represents an increase in oil use over 1917 of 509,000 barrels, which, under the existing price of oil, would result in an increase of \$824,580 per year. The enormous increase in oil consumption is due partly to the increase in business and partly to the shortage of water power. In this connection it may be pointed out that of the total consumption of oil about 300,000 barrels, costing \$486,000, is due to the shortage of water power below the normal average. The increase of oil from a 681/2-cent basis to a \$1.62 basis has increased the operating expense of the Electric Department alone by \$1,360,069."

The Commission deals with deviations from regular rate schedules and declares that before any surcharge or other increases be placed upon existing rates all consumers enjoying reduced rates for service where such rate is lower than the filed schedule rate for such service should be removed from their special status and be placed forthwith in the same category as other consumers who are being charged in accordance with filed rate schedules, except in certain cases where the Commission has specially authorized the company to grant free or reduced rates. It is estimated that the removal of such "deviations" will increase the company's revenue from sales of electricity by approximately \$200,000 per annum.

It is pointed out that the Electric Department of the Pacific Gas and Electric

Company is the source of more than onehalf of its gross revenue. The Commission accepts the company's estimates of the business done and expenses incurred by the department during the coming year and figures that, with the increased gas rates already granted and the increases in electric rates proposed to be granted, the company will earn a net income of \$8,165,655 over and above all operating expenses, including depreciation, taxes, etc., and, in addition, will have sufficient net income to pay all fixed charges, including bond interest and discount, note interest, the \$1,000,000 ordered in a former decision to be annually appropriated from income to special reserve, and will further be able to carry a balance to surplus of about \$1,390,655 after the payment of preferred stock dividends.

"This," states the Commission, "is about \$700,000 greater than the surplus earned for the year 1917, but approximates \$500,000 less than that earned during the year 1916 before increased costs affected the company's operations."

We think the justice of the Commission's reasoning in this decision, as, also, in the decision on gas rates, will appeal to any fair-minded citizen. How far these decisions will go toward placing our company, in regard to return upon investment, in the position it occupied before operating expenses began to soar skyward can be decided only after a fair trial of the new rates. It depends, also, upon the volume of business done. But, whatever the result, the decision of the California Commission in this electric case serves to call public attention to the absolute necessity for Congressional legislation that will permit the development of water power unhampered by conditions and restrictions that, hitherto, have hindered development very materially.

The oil problem is a serious one. The water problem need not be. There is plenty of power locked up in the Sierra snows. Why allow it to pour its wealth, unused, into the ocean? Sooner or later Congress must recognize the vital importance of this water-power question and deal with it in such manner as to satisfy the requirements of public service enterprise.

Tidings From Territorial Districts

Alameda County District

Novel use is being made of the company's records in the Alameda District. Power consumption on electrically operated irrigation plants is being converted into volumetric measurements of water used for irrigation on adjacent property. An intensive study of the use of irrigation water on an area of about 50,000 acres is thus being carried on by the State Water Commission. The study is tracing the total quantity of water pumped per year from each well back to the year of installation of the plant. It also comprises the divisional use of water on the various crops grown in this section, by

months, for the year 1917.

A large amount of field work was done by the commission in 1917 in measuring the capacities of these irrigation plants and the corresponding power input. The power input was measured by timing the electric meter discs with a stop-watch. A record was also made of the pumping heads, motor and pump speeds where these could be measured. This information will yield a tabulation of more or less complete tests on about 150 electrically operated irrigation plants pumping from wells, having capacities of one-quarter to two second-feet. This information, together with a parallel record of the fluctuation in elevation of the ground water and the fields irrigated, will enable the conversion of electric meter readings to pump discharge with a fair degree of accuracy. The company is co-operating with the State Water Commission in furnishing the meter constants for computing power input from disc revolutions of the meters, and in furnishing the monthly kilowatt-hour consumption by the plants for each year since their installation.

This investigation is being made by the Water Commission as one phase in its determination of facts as referee in the controversy between the Spring Valley Water Company and the Alameda County Water District concerning title to the water of Alameda Creek. The Spring Valley Water Company now obtains approximately one-half its supply for San Francisco from Alameda Creek and is

preparing to make additional diversions by use of its Calaveras dam, which is now under construction. The Alameda County Water District is an organization of property holders on the Nile's Cone, the territory along the bay shore including the towns of Niles, Centerville, Alvarado and Newark, and receiving its ground water supply from Alameda Creek. The district claims that additional diversions by the Spring Valley Water Company will

encroach on their well supply.

The Niles Cone is a very productive area with high land values. For the most part it is prolific in water production. Some wells yield over two and one-half second-feet and wells with capacities of from one-half to one second-foot are common. The appreciation of the value of this water in crop production has been steadily growing in the past six years. There are now about 275 irrigating plants in operation, of which about 175 are electrically driven. These plants have largely been installed since the dry years of 1912-13. The improvement in power service has undoubtedly played its part in this development.

The Pioneer Brass Foundry, Oakland, has installed an Eclipse crucible brassmelting furnace, displacing coke fuel. In the past, oil and coke have been used exclusively on account of the high temperature required in melting brass. This city gas installation has proven very satisfactory, after being used about six months, showing considerable saving in the cost of operation

of operation.

While using coke, only two heats could be handled, as the time consumed in bringing up the heat in the furnace required from three to four hours. With the gas crucible furnace four or five heats can be had from one furnace per day. The one gas-fired furnace takes the place of three coke-oven furnaces formerly used. The gas furnace takes No. 35 Dixon crucible, while a positive pressure blower furnishes the air on the blast burner. About 125 pounds of metal is handled, which takes about two hours in the morning to bring up the furnace to the first

heat. After the first heat only one hour and fifteen minutes is necessary to melt down 125 pounds of brass. The gas consumption about 400 feet per hour. The cost of gas fuel is about one-half cent per pound of Six hundred and brass. twenty-five pounds are melted in one furnace in eight hours. The crucible is much easier handled from the top of the ground. The present price of coke makes the cost about one cent per pound for brass melting.

In considering the time saved as well as the cost of fuel, gas has proven very valuable in this industry.

We believe this is the first installation on the Coast using city gas for a brass furnace.

In the recent War Savings Stamp drive the employees of the Oakland District subscribed to purchase \$6000.

Bob Miller says: "A strong will is all right, if you are not married to the owner."

Johnnie Clements said: "I bought a Liberty Bond because I value the liberty I have enjoyed, and want it to continue."

The young women of the billing department of the Oakland office have organized a Belgian Baby Relief Club. Meet-

ings are held in the office every Wednesday evening.

Several of the men employees of the company make voluntary contributions to finance the work.

Solano District

In the last issue of Pacific Service Magazine I observed, in the section devoted to "Tidings from Territorial Districts," an article, with accompanying illustration, concerning a young lady accountant and bookkeeper at the Colgate powerhouse. I desire immediately to notify my



Miss Stella McFall, clerk, meter reader and collector at Winters, Solano District.

brethren of "Pacific Service" that Colgate is by no means alone in its glory.

We have more than one member of the fair sex doing man's work in the Solano District. In the district head office at Dixon Miss Margaret Fisher is employed as stenographer and collector and, believe me, she fills the latter duty with unrelenting perseverance. In our branch office at Winters Miss Stella McFall serves the company in the dual capacity of meter reader and collector. It's a good idea, that, for she knows all about the bills she goes after and she gets results.

Perhaps, however, the most spectacular instance of what the present war emergency has developed in woman-power is furnished by Mrs. C. R. Harlow, who is taking her regular shift as an operator at the "Pacific Service" substation at Cement, the site of the Pacific Portland Cement Company's great plant in the foothills back of Fairfield, Solano County.

Mrs. Harlow's husband has operated the switches at Cement for the past four years, taking some 6000 horsepower of electric energy from the high-tension transmission lines at 60,000 volts, stepping it down to 2000 volts for distribution over two circuits to the cement plant hard by; in addition, dispatching current at 11,000 volts to the city of Suisun four miles away and supplying motive power for the electric railway plying between Suisun

and Vacaville. No easy job, even for a man; and now, behold, Mrs. Harlow has been added to the operating force, finding time as well as ability to do her regular eight-hour shift while not neglecting her domestic duties of housewife.

Brother Harlow is proud of his helpmeet. "I think she is just a little bit more wonderful than any other lady in the land," he says. "When she was asked if she would go operating she was flabbergasted, at first; but her ambition was aroused and it did not take her long to make up her mind.

"She has had a shift since



Miss Margaret Fisher, stenographer and collector at Dixon, Solano District.

May 30th, and no operator could handle it better. In fact, she has done a whole lot better than I did when I began. My fault was trying to find out things for myself, which usually ended in disaster; Mrs. Harlow has enough respect for electricity to ask questions instead of experimenting."

The accompanying views present Mrs. Harlow on duty at the substation. She says she thoroughly enjoys the work, and when you look at her you can tell that she means it.

C. E. SEDGWICK.

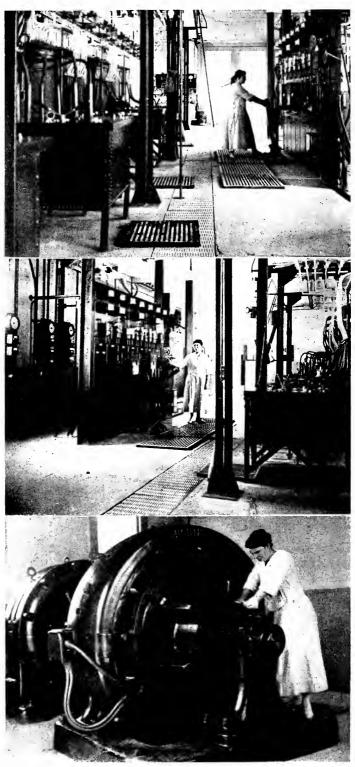
Santa Rosa District

Mr. Ralph Short, who has been a substation operator for a number of years past, enlisted recently and his call has come to report at San Pedro to leave on June 21st. Mr. Short has joined the Navy as an electrician and anticipates with a great deal of pleasure his service for his country.

M. G. HALL.

Sacramento District

Some three months ago Sacramento succeeded in getting the Government to locate one of its aviation fields some ten miles from town. Work was immediately begun and the necessary buildings were rushed to completion. On Saturday, June 15th, we were given our first thrill when five planes from the aviation field flew over and around Sacramento. For two hours they hovered over the very heart of



Mrs. C. R. Harlow working her shift as an operator at Cement substation.

the city giving a demonstration of the ability of the instructors who are stationed at Mather Field. They made the demonstration given by Art Smith at the Exposition look almost commonplace when all five machines were in the air at one time and doing dare-devil stunts.

When the school is in full operation they expect to have about one hundred machines. This aviation field is certainly proving an added attraction to Sacramento and is worth coming miles to see.

On Monday, May 20th, Sacramento turned out en masse to greet some four hundred Belgian, French and Italian soldiers who, since the war began, have been stationed in Russia and by suffering extreme privation and hardships have managed to get out of Russia and are now on their way back to the trenches in the Western front. The train bearing these heroes arrived at 8 o'clock a. m. The previous day's papers had heralded their coming and I really believe every man, woman and child in Sacramento was on the streets to do them homage and wish them Godspeed.

Their line of march from the Southern Pacific depot to the Capitol grounds was carpeted with flowers. During the time of their stay in Sacramento there were a number of young ladies on the street in Red Cross uniform and they were saluted by the soldiers the same as officers, and upon inquiry we were informed that this was customary in the war zone, as these Red Cross nurses were doing such a won-

derful work.

On the last Red Cross drive in Sacramento a number of people were found who were skeptical as to the work being done by the Red Cross; but if any of those doubting Thomases could have talked to these soldiers they would have become thoroughly convinced of the great work that is being carried on by the Red Cross Division of the various nations.

The following was handed to Manager McKillip a few days ago by City Attorney Archibald Yell. We have our street railroad troubles up here, you know.

THE ONE-MAN CAR

Tinkle, tinkle, little car, If indeed that's what you are—Running on the Tenth Street line, How I wish that you were mine. I would put you in a flat As a playroom for our cat, So he couldn't catch our bird.

You may think it sounds absurd; But when first the thing I spied, "Holy Smokes," I wildly cried, "Someone's child has strayed afar On his little kiddie kar." When at length it came along, I decided I was wrong.

Thought it was the private bus Of some plutocratic cuss, Who prefers to ride alone With a street car all his own—Or perhaps a circus van; Then it was the little man, Seated on a stool in front, Did a great magician stunt.

Pulled a throttle open wide, Then a casement by his side Folded up like some big fan. When this novel act began, Down a tiny platform dropped And upon it people hopped, With their car fares in their hand.

Then I saw a sight! My land! Some had dollars, some had dimes, He made change a dozen times, Answers questions with a smile, Hollers, "Step up in the aisle," Pulls a lever here and there, Regulating brakes and air.

When he is prepared to go, Shuts the bird-cage with his toe, Moves a gadget with his knee— Regulates the speed, you see— Pulls the bell-cord with his teeth, Lest some folks get caught beneath. That would throw 'er off the track; Maybe flop 'er on 'er back.

Calls out names of every street, Punches transfers with his feet. Thus he earns his daily pay, Running cars on Tenth Street way. Worth a jitney, yea, and more, Just to see him fold that door.

R. F. Robinson.

Marin District

We are informed today that the appointment of Harry Ridgeway to succeed Wallace Foster as manager of the Marin District has been confirmed.

We commend the directors for their good judgment, for Mr. Ridgeway is a man of sound sense, dignity, force and ease of manner. Under his administration we predict good service from the P. G. & E. in Marin County.—San Rafael Independent, June 25, 1918.



"Pacific Service" Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF JULY 15th, 1918 Total Number -

BOARD OF DIRECTORS—SAN FRANCISCO Livermore, Capt. Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred Allen, Randall Francis Behrens, William Henry Bohnert, Lieut. Arthur M. Bremer, Lieut. Merl W. Bucknell, Clarence E. Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Jesse Wilbert
Canfield, Major George H.
Cass, Chester R.
de Fremery, Leon
Dunne, Lieut. Edward A.
Dunton, Harold G.
Dyer, Fred E.
Forsland Baymond A. Forsland, Raymond A. Fronmuller, Theo. Carlton Gray, E. L. Hammond, Everett E.

Hansen, Ernest Axel Hauck, Lieut. Fred B. Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindblad, Wm. Nathone
Lindstrom, W. J.
McDermott. Louis Wm.
Mel, Lieut. Washington B.
Mensing, M. B.
Monroe, Lieut. Robert A.
Murphy, Lieut. Elmo Neil
Nordling, Wm.
Osborn, Lieut. Norris W.
Parker, Charles G.
uia while on active duty in He Hill, Sergt. Crawford C.

Regan, Arthur Rossiter, Sidney Benjamin Rossiter, Sidney Benjamin Rubenstein, Frank Sam Schuster, Lieut. John C. Shaw, S. B. Smith, Cyrus Newell Spinetti, John V. Stevenson, Lieut. Richard H. Sultan, Lieut. Walter D. Terhell, Corpl. Jacques Thomas, G. M. Trudrung, Harry Watson, John Wilkins, R. *Wilhelm, Clarence
Williams. Lieut. Leroy C.
Wright, Lieut. Ernest M.

*Died o pneumonia while on active duty in France, January 23d, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Harold M. Barr, John Milton Barrett, George Belford, William Belford, William
Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cormack, Douglas Leslia Cormack, Douglas Leslie Currier, J. Deuschle, Fred W. Duceo, Daniel Dupuoy, Max Erickson, William Ferguson, Allen E. Forbes, Robert E. Forbes, Stewart Frederickson, Stewart Gay, Earl D.

Hansen, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hunt, Lieut. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Sergt. Ivor
Klinefelter, Sam
Knoola, Charles Knopla, Charles Knott, Chas, E. Larson, Harry Larue, Chester Walton Longo, Michael Luce, Sergt. George L. Mashin, Lieut. Francis I. Massoni, Dante McKenzie, Malcolm M. Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Oswald, James

Parsons, James Perkins, Erwin S. Pershing, Orton Lewis Pilcovich, Vincent Prefontaine, George J. Prefontaine, George J.
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N. Smith, Stuart N. Stephens, Alden Raymond Thompson, Clark C. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

CHICO DISTRICT

Curtis, Ray E.

Andrews, Crist C. Broyles, George R. Hale, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Hinds, Perry Mare

Allen, Robert Grover Altpeter, Chas. E. Beaumont, Floyd Burton Compton, John A.

Britton, Lieut. Emmet N. Hager, George W.

COLGATE DISTRICT Hunt, Edward C

Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

CONTRA COSTA DISTRICT Knight, Lieut. Remi Chabot Matheron, Frank Mellerup, Fred H.

DE SABLA DISTRICT

Kass, Leo. M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

DRUM DISTRICT Johnson, Samuel T. Lohse, Lieut. Marcel P.

Truitt, James O.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Meservey, Charles A. Pease, Howard

Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James, Ed.

Brown, Ira A. Butterworth, William Z. Devlin, John A., Jr. Downing, Robert W. Krog, Corpl. John P.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Burns, Thomas F. Conger, L. N. Coyne, J. J.

MARYSVILLE DISTRICT De Rosa, J. Gavin, Harold J. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E. Hubbard, Sergt. H. W.

NAPA DISTRICT

Gash, Lieut, Frank Taylor Mayfield, James M. NEVADA DISTRICT

Earl, George Snell, Verne C.

Kent, James Cody

Beveridge, James

Bryggman, Emil W. Budalich, RO Grad Gaussou, Jean Gasey, T. Chase, Corpl. H. A. Clausen, J. J. Cullen, John P.

Anderson, John L. Anderson, Wm. Elmer Baker, Joseph Baugh, R. W. Belluomini, Primo J. Bigelow, Ernest C. Brady, Theodore Brewster, G. V. Brown, Jay G. Busses, George D.

Beeler, Joseph_J. Derr, Harvey Dyer, John B.

Barriere, Ernest

Arens, Frank Barker, Cecil B. Beach, Nelson James Bowers, Harold S. Francouer, Raymond J.

Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

ELECTRA DISTRICT

Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McMilin, Robert S.

FRESNO DISTRICT

MARIN DISTRICT

Maze, Norman E. Nair, Harold Newland, Fred Walton Patterson, A. Earl Stearns, O. J.

Johanson, Clarence M. Langford, Sergt. Clifford

Johnson, Corpl. Dwight D. Johnson, Frank Koenig, Sergt. George F. Madden, Thomas McCahe, Alexander McKenzie, Grover Clarence

Osborne, Lieut, Butler J.

Richards, James Taylor, Albert P.

PETALUMA DISTRICT

REDWOOD DISTRICT

SACRAMENTO DISTRICT

PLACER DISTRICT

Leary, Jerry

Deloy, H. Fulton, L. J. Haacker, Frank
Haines, G. V.
Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P. Jennings, Edward J. Jehnings, Edward J. Johnson, Hjalmar Kirkpatrick, G. B. Laughlin, Burton E. Likely, R. D. Likely, H. E.

Cameron, John Goyle, William Doyle Daigle, John M. Dick, Silas S. Dick, Silas S.
France, Fred Rhodes
Hornbeck, John Chas.
Johnson, William Max
Klein, Earl Everett
Logan, Raymond M.
Mathews, Maurice L. Melby, John Miller, J. E. Mullen, Ira J. Newington, David O'Connor, Edward T. Olseu, Albert Richeson, Merle C. Riggles, R. F. Roach, Martin L.

SACRAMENTO SUPPLY DISTRICT

Jones, Verne H. Kinz, William J. Koch, Carl

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter Haiden, Walter Inteman, R. Jacobsen, Earl D.

COLLECTION DEPARTMENT Oliver, Adrian Pierce Shea, Cornelius Thomas

COMMERCIAL DEPARTMENT

Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

Nuner, Glover J.

Stewart, W. S. Zuccone, Sylvia

Stearns, Ray Storm, Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, William

Snow, Wilbur Roland

Taylor, Lieut. Cary P.

Fairchilds, John H.

Mengel, Henry Peers, G. A. Sampson, L. E. Sebben, J. E. Smith, R. F. Strofeld, George

Sutcliffe, Lieut, Harold T.

Ross, Chas. Archie Ross, Harold Lee Sanford, Walter W. Sartori, Adolph Sheehan, Parker J. Smith, Joseph Lee Smith, Myron M. Stiewer, Winlock W. Suggett, Archie Dean

Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Keating, Arthur Edward Lindsey, Elroy M. Suters, F. X. Wilson, Herbert E.

Sheelian, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

SAN FRANCISCO DISTRICT-Concluded.

ELECTRICAL DEPARTMENT

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Lieut. Guy A.
Beatie, Gerald
Biehl, Lieut. P. F.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F.
Clark, Lyle G.
Cook, Frank L.
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold
Durand, Milton J.
Eichbaum, Sergt. C. W., Jr.

Estes, Sergt. Melville N.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Corpl. J. B.
Gerber, Harold
Glasson, Corpl. Lester G.
Griffin, John W.
Hagar, Lieut. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hiddebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.

Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McDougall, Chas. A.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robbins, Chas. W.
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William

Seifkes, Sergt. Lan F. Shields, Garrison F. Siggins, N. J. Southwood, Emerson C. Spandau, Lieut. R. D. Stohler, Adolph Szczepanski, Edgar M. Thompson, Capt. A. R. Thompson, Lieut. William Turner, John McBurney Varney, Capt. K. Roberts Wagner, Hilmor A. Walker, R. J. Walsh, Thomas W. Winter, William J. Wolfe, Harold S. Wright, Howard C.

GAS DISTRIBUTION DEPARTMENT

Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D. Gowans, Robert B.

Hansen, John T. Johnson, Sergt. Alhert Kemnitzer, Mellwood Murphy, Edward R. Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

GAS MANUFACTURING DEPARTMENT

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A. McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Hanley, Leo J.

RECORDS DEPARTMENT

Hughes, Percy Anthony

McDonald, Wm. John

SAN FRANCISCO SUPPLY DISTRICT

Abercombe, Corpl. Donald Andresen, Carl Clark, Richard Clark, William Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John

Lang, R. T. McNab, Hugh D. Merlinjones, Clarence Perassa, Louis Queirolo, Chas. Quigley, James L.

SAN JOAQUIN DISTRICT

Faight, Forrest W. Flint, Sergt. Arthur P.

Hunt, Lieut. Herbert Tevis McIsaac, Dan Martin, Lieut. David G. Olsen, Melvin L. Riley, Norman Sidney

SAN JOSE DISTRICT

Bailey, Sidney F.
Bigger, Clyde A.
Billard, Wm. F.
Branch, Ira H.
Brewer, Lyman E.
Brown, Henry Edward
Burns, Leo
Caldwell, Lieut. Edward F.
Carroll, Louis

Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Erbentraut, Edwin Otis Faulkner, Chas. C. Fiman, Edward F. Frederickson, J. C. Frier, George S. Hale, Lieut. C. St. John

Hall, Sergt. Evans E. Harkness. T. J. Jensen, Elmer D. Johnson, Lieut. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J. Rowe, Sergt. Ernest W.
Roy, Harvey Leon
Singleton, Paul
Sprung, Sergt. Stanley W
Stojanovich, Tony
Suess, Walter R.
Tarp, James P.
Terry, R. H.
Wright, Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B.

Harris, Eli Raymond

Ross, Mervyn F.

Anderson, Sergt, Frederick E.

SOLANO DISTRICT
Mix. Francis L.

Morgan, Mervin E.

VALLEJO DISTRICT
Argabrite, Corpl. Walter N.

YOLO DISTRICT

Bischoff, O. E.

Grandquist, K.

Howard, Everett J.

THE FOLLOWING EMPLOYEES HAVE ENLISTED BUT HAVE NOT AS YET BEEN CALLED TO THE COLORS

Labor Savers for the Home



You know how scarce servants are these days, and just when every woman is anxious to devote every minute to useful work of national importance.

Electricity helps to solve this problem. It saves steps and minutes here and there, even hours.

Prove this saving to yourself—Try an electric iron, or one of the other inexpensive Westinghouse Household Appliances.

When you find how they help you in minor household duties, you will be anxious to employ electricity in the larger tasks of electric cooking, washing and cleaning.

Westinghouse Electric & Manufacturing Co.

EAST PITTSBURGH, PA.

San Francisco Office, 1 Montgomery Street Los Angeles Office, 17th and Spring Streets





Electric Iron

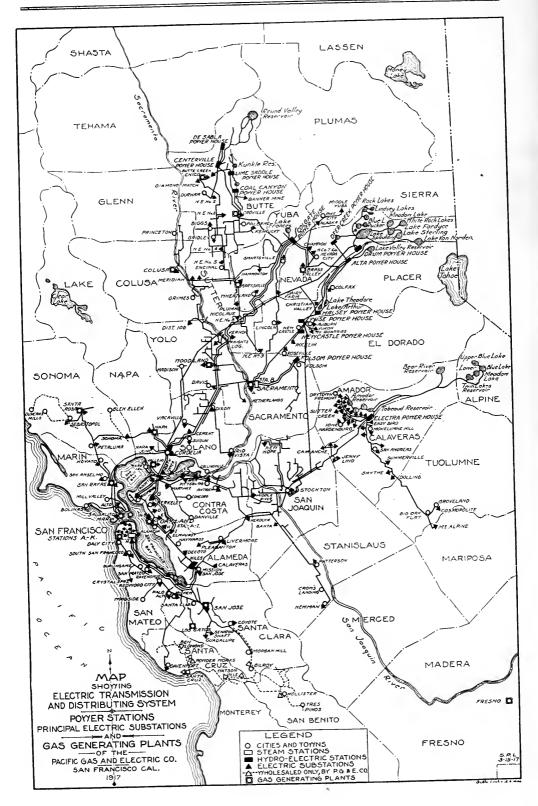




Turn-Over Toaster



Chafing Dish



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 460,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	INI	DIRECTLY	TOΤAL		
	No.	Population	No.	Population	No.	POPULATION	
Electricity	128	1,210,830	48	132,825	176	1,343,655	
Gas	51	1,219,690	2	8,600	53	1,228,292	
Water (Domestic)	11	57,302	8	19,300	19	76,600	
Railway	1	76,000			1	76,000	

CITIES AND TOWNS SERVED BY COMPANY:

		CITIES AND TO	WN2 2	ERVED BY COME	ANI:		
Place Por	pulation	Place Pop	ulation	Place Po	pulation	Place Po	pulation
¹Alameda	30,000	El Verano	400	MokelumneHill	300	² San Quentin	2,500
²Albany	2.300	2Emeryville	3.000	Morgan Hill	750	2San Rafael	6,000
Alvarado	700	Esparto	250	Mountain View	2,500	Santa Clara	6.000
Alviso	550	Fairfax	250	Mt. Eden	210	Santa Cruz	13,600
6-6Amador City	1.100	Fairfield	1.000	²Napa	6,500	² Santa Rosa	11.000
Angel Island	280	Fair Oaks	300	- Nevada City	2.900	Saratoga	300
Antioch	2.000	Felton	300	Newark	505	Sausalito	3.000
Antiocii	300	Folsom	2,000	Newcastle	950	2Sebastopol	1.950
² Atherton	250	Forestville	225	Newman	1,200	Shellville	200
6 6A subsumm	2,800	Forestville	48,867	Niles	1.000	Sheridan	250
6-6Auburn	500	¹Fresno	2,900	Novato	400	Smartsville	300
² Barber	375	Gilroy	900	Oakland	225,000	Soquel	400
² Belmont	550	Glen Ellen	5,200	Oakley	200	Sonoma	1,290
Belvedere	2,400	3-6Grass Valley	1.800	Occidental	600	2South San	1,290
Benicia		Gridley	350	Oroville	5,000	Francisco	3.750
Ben Lomond	800	Grimes	250		250	²-¹Stanford Uni-	3,730
² Berkeley	65,000	Groveland		Pacheco	6,000		2,600
⁶ Biggs	500	Guerneville	780 500	²-¹Palo Alto	500	versity 6-6Stockton	42.000
Bolinas	200	Hammonton	4.000	Paradise	500	*- Stockton	800
Broderick	600	² Hayward	950	Patterson	300	Suisun	340
² Burlingame	4,000	² Hillsborough		Penn Grove	250	Sunol	
Campbell	700	⁶ Hollister	2,500	Penryn	250	Sunnyvale	1,650
Capitola	275	6_8Ione	1,000	Perkins	7,500	Sutter City	250
Cement	1,000	Irvington	800	² Petaluma		5-Sutter Creek	1,300
Centerville	850	6-6Jackson	2,100	² Piedmont	3,500	Tiburon	350
Chico	15,000	² Kentfield	500	Pike City	200 1.800	Tres Pinos	300
Colfax	500	Kenwood	200	Pinole		Vacaville	1,250
² Colma	1,800	Knights Land-	100	Pittsburg	6,000	¹-6Vallejo	15,500
² Colusa	2,000	ing	400	Pleasanton	1,500	Wineburg	200
Concord	850	² Larkspur	2,000	Port Costa	1,000	Walnut Creek .	500
Cordelia	300	6-6Lincoln	1,500	*Redwood City.	4.200	Warm Springs.	200
Corte Madera.	350	Live Oak	300	*- *Richmond	16,500	*Watsonville	6,000
2-6Cotati	200	⁵ Livermore	2,500	Rio Vista	1,000	Wheatland	500
Coyote	200	Lomita Park	450	⁶ Rocklin	900	Winters	1,200
Crockett	3,000	Loomis	450	Rodeo	300	² Woodland	5,000
Crow's Landing	300	Los Altos	500	6-6Roseville	4,200	Woodside	225
² Daly City	5,500	² Los Gatos	3,000	² Ross	900	Yolo	350
Danville	400	Madison	250	Sacramento	76,000	² Yuba City	1,750
Davenport	300	Mare Island	500	San Andreas	750	_	
Davis	1,700	Martinez	3,500	² San Anselmo	3,000	Total Cities	
Decoto	300	² Marysville	6,000	² San Bruno	1,500	and Towns1	122 522
Dixon	1,200	Mayfield	1,100	² San Francisco	580,000	and lowus	,422,322
Drytown	225	² Menlo Park	1,100	San Jose	45,000	Add Suburban	
Duncan's Mills	200	Meridian	225	San Juan	550	Population	400,586
Durham	300	² Millbrae	300	San Leandro	5,000	горинацоп.,	100,500
5-6Dutch Flat	750	Mills	350	San Lorenzo	400	-	
Eldridge	500	Mill Valley	3,200	San Martin	200	m . 1 P 1	
2-6El Cerrito	1,200	Milpitas	350	² San Mateo	6,000	Total Popula-	922 109
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,023,100

Unmarked—Electricity only.

Gas only.
Gas and Electricity.

—Gas, Electricity and Water. —Gas, Elect. and St. Railways. 6—Electricity and Water. Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	200,615
Number of Gas Consumers	. 247,220
Number of Water Consumers	. 12,924
Number of Steam Consumers	447
Total number of consumers	

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

VERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in twenty-four investment centers (many of them having private wires to New York) are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

Boston, Mass. 10 State Street Albany, N Y. Ten Eyek Building Buffalo, N. Y. Marine Bank Bldg. CLEVELAND, OHIO Guardian Building CINCINNATI, OHIO
FOURTH Natl. Bank Bldg.
DETROIT, MICH.
147 Griswold St.

PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA.
Farmers Bank Bldg.
WILKES-BARRE, PA.
Miners Bank Building BALTIMORE, MD. Munsey Building Washington, D. C. 741 15th Street, N.W. ATLANTA, GA.
Trust Co. of Ga. Bldg.

CHICAGO, ILL.
137 So. La Salle Street
ST. LOUIS, MO.
Bank of Commerce
New Orleans, I.A.
301 Baronne Street
KANSAS CITY, Mo.
Republic Building
MINISTRUME STREET
RESTRICTION OF THE STREET STREET STREET STREET STREET STREET

San Francisco, Cal. 424 California Street

PORTLAND, ORE. Railway Exchange Bldg.

SEATTLE, WASH. Hoge Building MINNEAPOLIS, MINN.
McKnight Building
Denver, Colo.
First National Bank Bldg. 36 Bishopsgate LONDON, E. C. 2 Eng.

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. Crocker
F. G. Drum

John S. Drum F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer

Norman B. Livermore John D. McKee John A. McCandless C. O. G. Miller George K. Weeks

OFFICERS

F. G. Drum												President
JOHN A. BRITTON												
A. F. Hockenbeamer												
D. H. Fооте												
Jos. C. Love												
Chas. L. Barrett .												Assistant Secretary

HEADS OF DEPARTMENTS

F C RAIM								Consulting Engineer
								Consulting Engineer
W. B. Bosley								Attorney
R. J. CANTRELL .								Property Agent
J. P. Coghlan								Manager Claims Department
G. P. GUTTEN								Attorney, Kate Department
K. I. Dazey								Manager of Collections
P. M. Downing .							C	Thief Engineer Electric Department
E. B. HENLEY								Manager Land Department
JNO. H. HUNT								Purchasing Agent
J. P. Jollyman .					. <	-1		Engineer Electrical Construction
								. Chief Engineer Gas Department
F. S. MYRTLE								. Manager Publicity Department
L. H. Newbert .								Manager Commercial Department
R. R. Reidford .								Acting Auditor
Geo. C. Robb								Superintendent of Supplies
W. G. Vincent, Jr								Valuation Engineer

DISTRICT MANAGERS

DISTRICT	HEADOUARTERS	MANAGER
	Oakland	
	Chico	
	Colgate	
Contra Costa	Martinez	Don C. Ray
	De Sabla	
	Colfax	
	. Electra	
	. Fresno	
	San Rafael (Acting	
	Marysville	
	Napa	
Nevada	Nevada City	. L. H. Hartsock
Petaluma	Petaluma	H, Weber
Placer	East Auburn	H. M. Cooper
	Redwood City	
	Sacramento	
	. San Francisco	
	Stockton	
	San Jose	
	Santa Rosa	
Solano	Dixon	. C. E. Sedgwick
Stanislaus	Newman	V. A. Widenmann
	Vallejo	
	Woodland	

Pacific Service Magazine

Volume X



Number 3

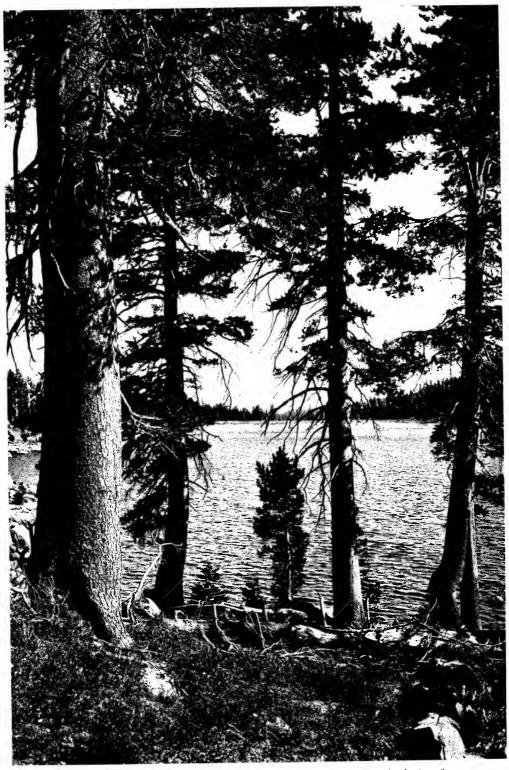
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for August, 1918

A PEEP AT LOWER BLUE LAKE, ALPINE COUNTY	Frontispi	ece
DISTRIBUTION OF GAS	W. M. Henderson .	67
PLEA FOR A CONSTRUCTIVE WATER POWER POLICY	J. A. Britton	74
OUR "PACIFIC SERVICE" EMPLOYEES ASSOCIATION		78
THE "PACIFIC SERVICE" ROLL OF HONOR		85
THE FINANCIAL SIDE OF "PACIFIC SERVICE"		88
EDITORIAL		90
TIDINGS FROM TERRITORIAL DISTRICTS		92

Index to Advertisers

Allis-Chalmers Mfg. Co	iii	Pelton Water Wheel Co	iv
Basford, H. R.	ν	Sprague Meter Co	ν
Basiora, n. R.	:	Standard Underground Cable Co	v
Chaplin-Fulton Mfg. Co	۷.	Co. C.	- ::
General Electric Co	1	Steiger & Kerr Stove & Foundry Co	'!
General Gas Light Co	iii	Welsbach Company	VI
Colored Gas Light Co	iv	Western Pipe & Steel Co. of California	iν
Graham, Jas., Mfg. Co	**	Westinghouse Electric & Mfg. Co	vii
National City Company 4th page co	ver	Westinghouse Electric & Mrg. Co	1 ::
Pacific Meter Co	٧	Wood, R. D., & Co	11



A peep at Lower Blue Lake, one of the Pacific Gas and Electric Company's cluster of powersupplying reservoirs in Alpine County, California, 8000 feet above sea level.

PACIFIC SERVICE MAGAZINE

Volume X AUGUST, 1918 Number 3

Distribution of Gas

By W. M. HENDERSON, Assistant Engineer, Gas Department

PUBLIC service corporation, a gas company in particular, is similar in many respects to any merchandising institution. That is, it is engaged in the business of selling gas service, which is its commodity or stock in trade. To properly conduct its business it must organize along more extensive lines than is the usual practice of other trades. This condition comes near to being the ideal, inasmuch as it eliminates the middle man and permits the gas company to produce, deliver and sell its product either wholesale or retail, direct to the consumer. The result of such a system is natural, it permits economical operation and satisfactory service, as the producer and seller are one.

The disposal of the product is made through the distribution department. This department maintains and operates the delivery wagons and the scales, which to a gas company are the pipes and meters. The pipes only are the subject of this article.

The distribution of gas is usually accomplished by large mains under low pressure, though the rapid development of rural territory and the spreading out of municipalities have prompted the adoption of high-pressure transmission and distribution to quite an extent.

LOW PRESSURE

The usual practice is to distribute gas through cast-iron pipes under a pressure varying in different communities, but generally about six or eight inches of water. Higher and lower pressures are occasionally used.

The distribution system is laid out originally with a view to maintaining a constant pressure throughout the system.

This is accomplished by installing large enough pipes from the works outlet to a point beyond the center of distribution, radiating out from which are pipes of reduced size. These pipes are connected wherever possible; the ideal system in this way would have no dead ends. It is always the object of the engineer in designing the distribution system to build with the idea of taking care of the peakhour demand. That is, the pipes must be of such size as to care for the maximum momentary demand without apparent drop in pressure. This point is quite important, for in some communities where the load is entirely domestic, there is a great "pull" between 11.30 a.m. and 12 m. or 5 p.m. and 6 p.m. The size of main pipes must be such that they will supply this demand without a pressure drop so great as to affect the gas-consuming equipment.

A distribution system may be laid out properly and give satisfaction until the community grows or industrial business develops to overtax the capacity of the pipes installed. Replacement with larger pipes is the best remedy, but this is not always practicable. To reinforce the existing system a high-pressure transmission or boosting main is often installed



Excavating ditch for gas pipes.



Lowering cast-iron pipe into ditch.

around the territory. Then by the use of governors the high-pressure gas is fed into the low-pressure system at various points. The governors are sensitive and will maintain the proper pressure at periods of demand, opening when the pressure falls and automatically closing when it rises. The high-pressure system, with its necessary compression plant, storage tanks and operating charges, is an expensive remedy. The proper choice of solution should be with the management as to whether the operating charges of the high-pressure system are less than the interest charges on the cost of large lowpressure trunk lines less installation costs of the high-pressure system.

As a cure for the above condition, or, rather, relief, it is possible to install a rotary fan or "booster" at the works outlet and thus increase the pressure, to any desired extent, for any period of time. This is a cheap remedy, but meets the requirements inasmuch as it overcomes the loss in pressure, but like other cheap or makeshift solutions it is worth no more than it costs. A system dependent upon a booster for delivering gas to its remote consumers will deliver either an excessive or varying pressure to the consumer near the works. This in cases has caused difficulties to certain classes of consumers who must be taken care of.

For instance, in one of the small districts, the booster was operated from 5 a.m. until 10 p.m. and the holder pressure was raised from four to seven inches. Now the local morning paper uses a linotype machine with a gas burner to melt the type metal. At 10 p.m. the drop in

pressure lowered the gas flame and thus cooled the metal. The operator could have turned up the gas, but usually he lost about fifteen minutes from the time he noticed it until the metal was again hot. To remedy this an individual pressure regulator was installed on the service and the pressure maintained at less than three inches. To assure plenty of gas at this pressure the orifice of the gas burner was bored larger.

Another similar case happened in another district. This was a hatchery. In a hatchery a constant temperature must be maintained. The operation of a booster at the noon and night peaks was the cause of increased gas use in the hatcheries, with the result of increase in temperature. It was only necessary to turn down the burner, but usually there was no one to do this. The installation of a house regulator adjusted lower than the lowest pressure in the district has eliminated this complaint.

INSTALLATION

In the installation of mains certain fundamentals must be observed, accompanied by a certain amount of practical experience. The first can be obtained from books, the second and important detail can only be learned from personal service, with eyes open, under a competent foreman.

The depth at which mains should be laid is of great importance, as in this day of heavy traffic the pipes must have ample protection. In no case should this depth be less than thirty inches. Of course the exact depth depends upon the



Lead runner in place and pouring pot.

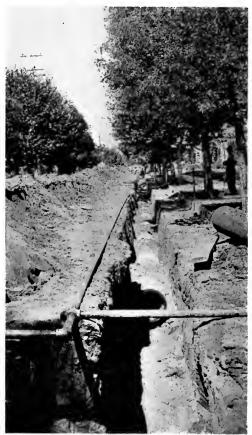
presence of other subsoil structures. As it is necessary to lay pipes upon a grade sufficient to properly drain them to drip pots, and as it is economical and good practice to lay as long a line as possible without such drips, it often develops to be quite a problem to avoid getting too deep. Too deep ditching increases the expense of initial installation as well as the subsequent tapping and laying of service pipes. When the grade and flow of the gas in the pipes is in the same direction the bottom of the trench may be almost level, but if the contrary is the case and the flow of condensation is against the flow of gas, then a grade of one-fourth inch for each twelve feet length must be allowed. It is the best practice to grade all pipes and maintain the depth between a minimum of thirty inches and a maximum of four feet.

Soil conditions require study. Pipes should never be laid in ash or cinder. When a trench must be dug through such, either make the back fill with good earth or protect the pipe by a cover of at least one inch of cement mortar. If a trench is through sand, provision must be made for cribbing or the trench must be started wide to give a batter to the sides. Usually good digging conditions are found.

PIPE LAYING

A piece of work is first started by lining up the job, distributing the pipe and fittings, bringing up tools and material and marking out the trench. Remember, half the job is completed when you get properly ready to do it. The opening of the trench is usually by hand. The proper depth is dug; this is watched with care as the foreman does not wish to handle more earth than necessary, and it is important that the pipe rest on the ditch bottom and not be suspended high above the same on blocking.

In trenching for cast-iron pipe it is necessary to dig bell holes every length, or twelve feet. This is done to permit the pipe layers access to the joints. After sufficient trench is open a few men are



16-inch cast-iron cement-joint pipe line, Fresno, Cal.

started at pipe laying. The pipe is lowered to the ditch bottom, spigot ends of pipe are placed in bells and forced home. The grade of pipe is determined by level and, if necessary, properly blocked to this level. Blocking is placed just back of the bell and a few feet in front of same. Blocks are best when made from creosoted pine or redwood. Never should a pipe be graded by tamping dirt under it. When pipe-laying men have made some headway, the calkers or joint makers are put to work.

JOINTS

Cast lead and cement are practically the only materials used, and with good yarn each makes a satisfactory joint. Good yarn is essential and only genuine hemp rope such as the standing rigging of sailing vessels should be used.



Welder at work in the ditch.

In making the lead joint, the varn is first twisted into a roll large enough to require driving into the joint; it is then evenly driven around the joint so as to maintain the spigot in the exact center of the bell. After half the bell has been filled with yarn a lead runner is slipped around the pipe, flush up to the bell, and held at the top by a stamp, leaving an opening for pouring the hot lead. In the meantime the lead is melting in the furnace pot; care must be taken not to burn the lead, it should be hot enough to just char a stick of wood thrust into it. The molten lead is poured through the aperture at the top of the lead runner and the joint is east. Joint after joint is thus done. Calkers follow along and set the lead by properly going around each joint with chisel and hammer and leave same with an even surface, and so closely driven

that the lead appears to be welded to the iron.

Cement is the ideal joining material. It is cheap, strong and easy to make. It costs just one-tenth of what lead joints cost. The proper mixing of cement is the basis of success with this material. Neat cement alone, though advocated by many, is not satisfactory. It has been found best to mix two parts cement with one part sharp sand. This mix does not contract or expand in setting, whereas neat cement will rise in temperature about 50 degrees F. in setting, which heat is accompanied by expansion and followed by contraction upon cooling.

The joint is made by driving one roll of hemp yarn into the bell. This must be driven up gas-tight, as the success of the joint depends upon the first yarn, the duty of the cement being to hold this yarn in place. It is well to either soak the varn in water or, better, to dip it in the cement mortar. A little water is also sprayed into the joint; this practice aids the cement to set rather than dry out. The cement is mixed stiff and the joint then filled up to the face by working it with a tool all around the pipe. Then a strand of yarn is driven into the bottom of the bell and locked in the lead ring of the bell. The ends are brought up both sides and hammered well home. Any excess cement forced out is scraped off at the top. The space that remains outside this second varn is filled with cement and pointed with the trowel.

Considerable care must be taken in making cement joints. The pipes must be absolutely rigid and an even temperature maintained, particularly during joint making, as cement must have at least forty-eight hours to set. Joints must be protected from the sun and it is well to cover the pipe with earth between bells.

All joints are tested by putting gas or air pressure on the inside of the pipe, and each joint is gone over with soap and water. This test is very sensitive. Leaks in lead joints are recalked, but cement joints must be cut out and remade.

At Fresno there has been completed the installation of 24-inch, 16-inch and 12-inch cast-iron pipes to connect the new gas works to the existing distribution system. This work was all done in the heat of the summer and although laid with cement joints it has proven a highly successful job.

SERVICES

The gas supply to the individual consumer is through wrought-iron pipes tapped to the cast-iron mains. The manner of joining depends upon the size of the service compared with the size of the main. Nothing smaller than one and onequarter inch is used as service pipe. As cast-iron pipe has considerable stock it is customary to tap the service holes and thread them. It is not good practice to tap holes greater in diameter than onefourth the diameter of the main pipe. The service connection is made by setting up a tapping machine on the pipe; this taps and threads the hole. Into the hole is screwed a service tee, or ell, then a 45-degree service ell, which is left facing the direction the service is to run. The pipe is then laid, and care is taken to get plenty of grade. If the service pipe is larger in diameter than the hole permitted to be tapped in the main, it is perfectly proper to use a reducing service tee. This restriction of the tapped hole is not harmful, for the size of the tap offers little resistance. This practice is not to be carried to an extreme, as when the service pipe is twice the diameter of the allowable tap in the main pipe it is best to cut in a tee or place a split tee on the main and tap full size. The reason for all this care is to avoid broken mains, caused by weakening the cross-section of the pipe with large service taps. Split tees will reinforce a pipe.

As little of the service pipe as possible should be exposed, and the meter location or end of service should be selected so as to require as little pipe as possible between main and house pipes. Service pipes exposed to drafts or directly under wet lawns or in cold damp basements are



Welder working on top of ditch.

conditions that bring on trouble in the form of service stoppage.

HIGH PRESSURE

High pressure is such a flexible method of distributing gas that it is difficult to avoid carrying it to the extreme. It serves the gas industry best when used for transmitting gas to distant communities or as a feeder to reinforce the low-pressure system.

Wrought-iron pipe only should be used for this class of service, as with such pipe tight joints can be made. Screw pipe and line pipe sockets make satisfactory joints, but the cost of standard weight pipe is high compared with casing pipe. Casing pipe being light and thin is not adapted for thread ends, and it is usual to join it with patent couplings. The dresser coupling consists of a barrel that slips over the pipe ends, against which is fitted a flange and between flange and barrel ends a rubber gasket. Through the bolts draw the flanges together and squeeze the rubber against the pipe. A tight joint can be made, but after a while leaks are likely to develop. The rubber is subject to attack by the gas, as a feather edge of the gasket is exposed to the gas. This will slowly decompose the rubber, which, particularly if there is any movement of the pipe, eventually blows out. When lead wire is substituted for rubber, joints can be made more satisfactory and permanent.

The only successful type of joint for high pressure is no joint at all. That is, welding by oxy-acetylene the butt ends of the wrought-iron pipe. This idea was developed by Mr. L. B. Jones of this com-

pany a little over five years ago; today it is exclusively used and has proved itself so satisfactory that no substitute is even given a thought.

The pipe for welding is purchased with chamfered ends, and so when butted together a V is formed. The welder works on top of the ground alongside of the trench. With the oxy-acetylene torch and a stick of wrought iron he proceeds to heat the pipe ends and melt the stick of iron which builds up on the pipe ends.



Broken gas main on fire.

He goes completely around the pipe; usually the pipe is turned as it is more convenient to make the joint on top. But when necessary, the welder works the joint upside-down. Practice in this work only makes

perfect. The things to avoid are learned by observing cause and effect and very soon the welder becomes perfect and joints are made as strong as the pipe itself.

The entire system of gas distribution at the recent Panama-Pacific Exposition in San Francisco was through pipes with welded joints. The gas supply to the Redwood District is through an 8-inch highpressure line thirty miles long, every joint of which was welded. Between Santa Rosa and Petaluma there is over twelve miles of welded pipe. In Fresno, Sacramento, San Rafael, Oakland and San Francisco every bit of high-pressure laid in recent years has been welded.

OPERATION AND MAINTENANCE

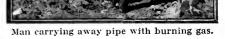
The distribution of gas is subject to difficulties and hazards, as is any other enterprise. Its lines of communication with the public are sometimes stopped or damaged and on such occasions first-aid practice must be adopted. Heavy traffic, settling of streets, other subsoil construction work will occasionally break a main and cause it to leak. Bitumen and concrete streets prevent the escape of gas direct to the atmosphere. Gas often gets into sewers or follows along outside of the pipe to make its way to the atmosphere. Leaks are thus hard to find, the

> odor of gas not always being at the point of leakage.

> To locate leaks it is the general practice to bore holes in the street above the main location. The nose is a good detector and closeness to the leak can be determined by the intensity of the odor. A



gas burning at the top.



leak detector is a very useful instrument and the pouring of soap and water in holes is also a means of locating escaping gas. The nose should not be used if other means are available, for continuous exposure to gas is dangerous.

It often happens that leaks get on fire. This is rather inconvenient, as well as exasperating, but a method of attack has been developed and now such fires are held in contempt. If a break in a main catches fire it is necessary to remove the material covering the pipe so that the gas burns freely at the pipe. Then a piece of 4-inch pipe, or larger if necessary, about ten feet in length is slipped over the flame and lighted at the top. The earth is then thrown in around the bottom of the standpipe to exclude the air. The gas is then only burning at the top of the pipe. Now, with a few good hands the length of 4-inch pipe is removed or thrown away. The gas in this pipe is sufficient to satisfy the flame, so that only escaping gas is coming from the break in the pipe which is now easy to fix.

Domestic gas is a staple product, but like all gases it must obey nature's laws. A difference in atmospheric pressure or temperature is liable to change slightly its physical characteristics, just as these same forces alter the character of our own air. All gases, and air is a gas, will carry moisture. The percentage of moisture depends on the temperature and pressure. Thus, a gas will carry at 60 and 30 about 1.8 per cent by weight of water vapor. Any drop in temperature and the gas cannot hold in suspense its moisture, which condenses; thus you see the necessity for drip pots in the distribution system. The storage of gas in holders, over water, exposed to the sun accounts for the presence of most of the water vapor present in the gas.

Another source of much difficulty in the maintaining of good service is the deposit of napthalene. This substance is a hydro-carbon (C₁₀H₈); it exists in two different physical states, a gas or a solid, depending upon temperature. As a solid it occupies a very large volume in proportion to its weight. It is this property of the substance that renders napthalene such a trouble maker. Gas at 80 degrees F. will hold in suspense 40 grains of napthalene, while at 60 degrees F. it would carry but 25 grains. Thus if a gas is not

exposed to a colder temperature at the works than it meets in the distribution system it is likely to deposit napthalene wherever it meets with a drop of temperature. Now it is difficult to chill gas at the works, so if it carries anywhere near its saturation of napthalene it is sure to drop some in the system. This is the case in San Francisco, where gas is made in the sun belt of the Potrero to be sold in the fog of the western part of the city.

One relief from this trouble is to remove the napthalene at the source, that is, strip the gas by oil washing. Then a gas is sent out from the works far below the saturation point of napthalene. If the distribution system contains deposits of napthalene, then for a time trouble will continue, for the dry gas sent out from the works is a good solvent for this napthalene. It will pick it up only to drop it again when it becomes saturated and meets a fall in temperature. After a while, though, the system will be cleaned. The trouble from this source occurs in service or house pipes, for such are exposed to atmospheric changes. Ground pipes are insulated by earth and temperatures seldom vary, so little trouble is experienced in the mains.

The removing of napthalene is accomplished best by the use of distillate or gasolene, it being soluble in either. The liquid is poured into the pipes and then blown upon, the distillate dissolving the napthalene and carrying it to the drips, where it is removed with the balance of the condensation.

The difficulties encountered in gas distribution are so trifling, however, that we may fairly claim both low-pressure and high-pressure distribution to be among the strongest elements of the "Pacific Service" make-up, which means continuous and reliable service.



Plea for a Constructive Water Power Policy

By JOHN A. BRITTON

Reprinted from the Journal of Electricity, San Francisco, issue of July 1, 1918]

States Government in the matter of the development of water power in the public land States have been the subject of discussion for only a few years, for the reason that the greater development and utilization of water power has been of recent origin—apparatus for high heads in large units having been brought to their present efficiency only within the last decade. In the initial stages of development the amount of water used and the necessity for use were relatively small.

The assumptive control of developments under misconstruction of acts of Congress by department offices, has resulted in nothing during the past years but the holding up of development on public lands, and such holding up is directly traceable to the hysteria of ultraconservationists and to an absolute and complete misunderstanding of the right of the several public lands States to the control of their natural resources.

The development of the public land States has of necessity been slow in character, due primarily to their distance from the eastern seaboard, the natural inlet for foreign commerce and immigration.

The population of such States has not grown to anything like the proportions of the Eastern States, but in recent years the mineral and agricultural development of these States, and, particularly, the development of industries in the last four years, due to war conditions, have awakened new thoughts in the minds of investors, and the possibility of wondrous development, not only in uncovering the bidden wealth in these States but largely in the provoking of their agricultural possibilities, has resulted in increased and necessary immigration that must eventu-

ally make these States empires in themselves.

Threatened exhaustion of coal and oil resources for power purposes, coupled with diminution of man-power for their production, has called to the attention of the executive branch of our Government the necessity for some encouragement of that which has heretofore been largely discouraged, and the suggested waterpower measures now pending before Congress, while not as safe and sane as they should be, still offer an outlet for capital without some of the more prohibitory provisions which have surrounded previous conditions of occupancy of public lands. The hearings recently held before the House committee brought out more clearly than ever before disclosed the necessity for removing some of the very objectionable provisions of the law which now obtains.

On February 27, 1918, the Secretaries of War, Interior and Agriculture joined in a recommendation for a water-power bill to the House of Representatives and said, among other things:

"Water-power legislation should have in view not only the maintenance of the rights of the public in the national resources, but also the adequate protection of private capital by which such resources are developed."

Investments in hydro-electric enterprises will not be encouraged by offering to an investor a contract with the Government by which he will be required to barter away any portion of his property rights or waive any part of those constitutional guarantees by which all other property is protected. He will naturally seek for safer and more promising channels for his investment. What the public wants is more and cheaper water power for its manifold uses, and the consequent

expansion of essential industries and conservation of fuel. To the reasoning mind it seems ridiculous that because the Government possesses lands within a State and does not possess or claim any right to water flowing through and over said lands, it should, because of such ownership in lands (sometimes minor in character compared with the entire project proposed), exercise the right to impose burdens of occupancy and burdens of taxation upon any development which is made not primarily for personal profit but for the upbuilding of the State and for the comfort and convenience of its citizens.

It is not so very long ago that private capital seeking to establish industries in any part of a State was welcomed with open arms, grants of land given to it in perpetuity, and a bonus collected and given to the promoter for the purpose of encouragement to him in the work he would do in the employment of men, reduction in costs of material, and for other economic reasons.

Certainly, under powers of regulation possessed by all of the public land States through its commissions, private capital cannot do more than earn a minimum amount upon its investment; and, instead of imposing burdens not only upon the promoters and investors but, indirectly, upon the public, the Government's policy should be one of encouragement and not discouragement, for the lands which are sought to be obtained under Federal grant for water-power purposes are avail-

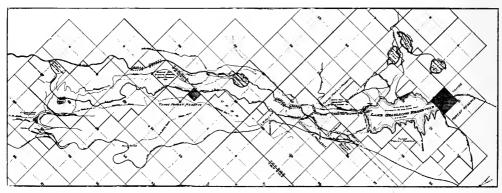
SHASTA NATIONAL purposes excepting FOREST 3 13 è 96 MI Ē Palented Land □ Unperfected Titles □ Forest Service Permit POWER Riperion Rights House Right of Way: Interior Dept., Magon Roads Right of Way. Private Land

THE PIT RIVER PROJECT This map indicates how a fraction of a mile upon the National Forest, with the balance of the project totaling 9.4 miles upon private property, has compelled the owners to classify the whole as being subject to the extremely re-stricted regulations of the Government. The consequence is that the project today is not going ahead in development.

able for no other to add to the scenerv of the surrounding country. More particularly does it strike the lay mind that where but a minor portion of government land is used in relation to the entire project it is absurd and ridiculous that the entire project should, because of a slight trespass upon government land, place itself under the control of a bureaucracy regulating, under Federal legislation by assumed right of recapture and other burdensome conditions and regulations, millions of capital invested in good faith. Rather than opposition, encouragement should be given to such enterprises.

California enterprises enjoy the privilege of purchasing their electric energy at rates as low as, if not lower than any other State in the Union, and if the energy sold by the power companies of this State were energy generated by waterpower plants alone, the cost to the consumer would be further lessened. As it is, by reason of the deterrent governmental policies heretofore employed, a large proportion of the energy needed by the continually increasing demands due to the growth of this State is generated by steam

proper sphere. Do not invite investment in public utilities upon such liberal terms as, if foolishly accepted, will result in ultimate confusion and disaster, for we in the end must pay the cost. Give to individual enterprise a fair chance to serve us at a fair price to be justly and lawfully fixed by our own trusted agents. Potentialities which might be utilized for our benefit are running to waste. Let us have the use of them now under liberal laws. The need is greater now than ever before. The nation itself will reap a benefit by having its navigable waters improved without cost to it, and its idle, unproductive vacant land will be put to use, when the wasting water powers are harnessed to serve us, and our taxable wealth



THE LAKE SPAULDING PROJECT

In the map it will be observed that the privately owned lands amount to 12,578 acres and yet the 38.7 acres at the upper end of the lake coming upon government land has seriously hampered this important project.

through the medium of oil, and the cost of generation is very largely increased. Thus is the public directly suffering a loss because of mistaken ideas on the part of Congress with reference to the opinion of the public. A thoughtful writer has said that if the inarticulate public interest, which is ever ideally present and paramount in the legislative mind, could be as audible before the committees in Congress upon the subject under discussion as are the departmental officials and advocates of private interests, it would, no doubt, express itself to this effect:

"Grant us these rights freely. We are equal to the task of protecting and governing ourselves in our own local concerns by our local laws and governmental agencies, and the Federal arm is strong to protect us in all matters within its

and productivity will be greatly increased. Surely with respect to such unused proprietary rights of the Government the saying is true, 'There is that scattereth, and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty. The liberal soul shall be made fat; and he that watereth shall be watered also himself.' Through a just and liberal policy in matters such as this our people have spread over the continent and become a great nation. Do not suffer that policy to be longer interrupted, but hold fast to the principles on which our Government was founded, with its watchwords of Liberty and Justice."

As one interested in the full development of this glorious State of ours with a vision as to its future possibilities and prospects, and with a further knowledge from years of experience of what can be done with that unknown and unseen

agency, electric energy, I do not know of any gift which the Government of the United States could give to one of its States that would be more potent in bringing added wealth, not only to the State but to the Government, than the unrestricted use of government lands for the development of water power, the essential necessity in the growth and the wealth of the State, for I have that confidence in the peoples of these United States, that full confidence in the owners of capital for investment, to feel that in these days no disadvantage would be taken of a liberal policy by the Government; and I am fearful that without some such policy being pronounced by legislation, this and other States that have been by some unknown and unseen force placed without the pale of the original States of the Union will fail to have their rights recognized, and for that reason will be separate and apart in their development from the other portions of the country. It is certainly a fact that the western land States have proved in these troublesome times their full measure of patriotism and devotion to our country, notwithstanding that, being newer stars in the Union's flag, they have not received the consideration that the older States have received.

When the day of the ultra-conservationists is passed and a sane view of the necessity for development of the resources of each State is taken by those responsible, then will the era of prosperity that we have been waiting for so long come upon us, and then, and not until then, will the true relation of this State to its parent Government be thoroughly and fully realized.

The two maps attached indicate the injustice of the compulsory regulations at present in force which require that permits be taken out on water-power locations subject to revocation of the entire project at pleasure of the Secretary, and the imposition of fees for occupancy and penalties for nonfulfillment of obligations of work as contained in the permits.

The map showing the Pit River project indicates that but a fraction of a mile is upon the National Forest, while the entire balance of the project will be upon private property, totaling 9.4 miles.

The map of the Lake Spaulding project shows occupancy in the entire project of a portion of a quarter section on the upper end of Lake Spaulding, the rest of the entire development, including canals, powerhouses and transmission line, being upon property owned in fee; the total acreage involved in government land being 38.7, and that owned in fee being 12,578.

No additional argument is necessary to make it appear that in such cases the policy of the Government should be to promote development by not insisting upon rules and regulations for the entire project or the major portion of the same, which should only govern the occupancy of government land.

The following contribution to our patriotic war songs' album is sent in by Mr. Joseph Love, assistant treasurer of "Pacific Service":

When your Uncle Sam sings
"Over There," "Over There,"
He cares not for kaisers or kings,
Over there, over there.
To sing across rivers is no new affair,
It's the same old song with a different air
That he hummed while crossing the Delaware,
"Over There," "Over There."

Uncle Sam is now ready to launch his boat, Over there, over there, It's all fitted up for the Kaiser's goat,

Over there, over there.

On the fords of the river Uncle Sam has a line, And the only one thought that is now on his mind Is the song he will sing while crossing the Rhine, "Over There," "Over There."

Their mighty Rhine's to your Uncle a creek
Over there, over there.
To get him across he won't stop for sleep,
Over there, over there.
Then hands across to him over the deep
To help in the crossing your promises keep
That you made Uncle Sam and the boys of his fleet
Over there, over there.

OUR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION



After an interval of inactivity stretching over the major portion of the summer vacation period, Association "doings" were resumed with a meeting in San Francisco on the evening of Tuesday, August 13th.

пинания принавания принавания принавания принавания принавания принавания принавания принавания принавания при

The entertainment committee had provided for the leading attraction Dr. B. M. Woods, president of the Academic Board, School of Military Aeronautics, University of California, with an address upon "Military Aeronautics." Needless to say, a subject which was not only timely but of especial interest to Californians could not fail to draw an audience, and the assemblage that heard Dr. Woods was indicative of the attraction the aviation problem holds for the public today.

It was, of course, not possible for the learned lecturer to go very deeply into detail in the limited time allotted to his discourse; nevertheless, what he had to say was of such instructive value to his hearers that the time passed all too quickly, and when he closed there was a general expression of regret that they could not have more of it. He took his audience through a good deal of the history of aeronautics. It came as a surprise to many to learn that as far back as the sixteenth century Leonardo da Vinci, the noted painter and sculptor, left sketches behind him which suggested not only the parachute but, also, the acroplane. Developments, of course, did not follow for centuries, and then the first flying machine was upon the motive principle of flapping wings or fans, in imitation of a bird. Dr. Woods, indeed, expressed the opinion that the flapping wing or fan idea might, after all, prove the most practicable in the end, that more than one scientist was in favor of reverting to this seemingly primitive design. In the meantime, however, came the great developments made by the Wright Brothers with biplanes, followed by the Frenchman Bleriot with the monoplane, until today the conquest of the air was accepted as a scientific fact.

Dr. Woods gave some interesting descriptions of the development of the fighting and bombing plane. Some idea of the capacity of the latter was gathered from

the information that these huge machines measure 150 feet from tip to tip of their planes, with 15 feet of space between the planes, and carry four engines. In response to questions, Dr. Woods informed us that the bombing planes reach a speed of 90 miles an hour; fast, indeed, but nothing in comparison with the speed of the fighting plane, which has been established at 135 miles.

Members of the "Pacific Service" Employees' Association would like to hear more upon this very interesting subject. This may be accepted as a suggestion to the committee having charge of entertainments.

Variety features preceded the lecture. An amusing diversion was created by Chairman Dazey calling upon Mr. A. U. Brandt to tell the members present what he knew about Mr. Fred George. This he did in witty fashion, and the merriment was enhanced by Mr. George, in turn, rising upon his feet and making a counterattack upon Mr. Brandt. It was a sprightly interlude and typical of the spirit of "Pacific Service."

The annual outing of the Association took place, as scheduled, on Saturday afternoon and evening, July 20th, at Pinehurst Grove in the foothills back of Oakland.

The weather was charming, and the boys and girls turned out in their brightest and best for the day's merrymaking. The usual program of field sports occupied the bulk of the afternoon. Of these, it is sufficient to say that, as usual, Mr. B. J. Crowley upheld his title as the champion sprinter of "Pacific Service," although E. N. Vallejo gave him a close run for it on the 75-yard dash. In the 50-foot dash for fat men C. A. Perry, who qualified for the job rather by weight than by adipose tissue, exhibited a professional style that aroused a general desire to see a match between him and Crowley. It is suggested that this take place next year, and that the heavier of the two prospective participants go into training without delay.

Luncheon baskets were in order, and when six o'clock came all the tables under the trees were weighted down with good things. Perhaps the most enjoyable time of all was the hour or two after supper when the boys and girls indulged in dancing until train time. The following committees were in charge of the picnic:

Picnic committee, B. J. Crowley, chairman; R. A. Gentis, assistant. Reception committee, H. P. Pitts, chairman; J. Chas. Jordan, assistant; Misses I. Murray, G. M. Cummings, E. Fino, B. Willing, Dorothy Frazer, Edna McNulty, Messrs. J. Leary, E. A. Weymouth, J. C. Bowden, H. Wagner, E. C. Johnson, W. N. Munroe. Floor managers, Percy Hardenbergh, C. H. Cowell. Games committee, F. E. Oldis, chairman; R. Jenny, O. H. Barthol, C. E. Murphy, E. O. Mahoney, H. W. Beekman, W. O. Stephens, F. M. Veria, R. E. Tyler. Judges, K. I. Dazey, Henry Bostwick, F. A. Leach, Jr., F. S. Myrtle. Refreshment committee, A. U. Brandt, chairman; F. R. George, W. W. Shuhaw, R. E. Fisher, E. B. Henley. Transportation committee, L. M. Evans, H. T. Bennett. Orchestra, direction L. A. Melbourne.

President Dazey and the members of the executive committee are desirous of calling the attention of all active members of the Association to the advisability of observing the hour set for the various meetings held in San Francisco, Oakland and elsewhere.

Tardiness in the arrival of the audience has resulted in more than one meeting starting behind scheduled time, with the result that the attempt to get through the preliminary program has brought on the star feature of the evening at an hour altogether too late to either give that feature full justice or allow a reasonable time for the boys and girls to have their measure of dancing before leaving for home. In addition to this, when a person prominent in the affairs of the nation has consented to address our members at any one of these meetings it is essential, out of mere courtesy if nothing else, that he should be presented to his audience at the proper moment for his address. Members will, no doubt, bear this in mind in the future.

The Eighth Annual Singles Tennis Tournament for members of "Pacific Service" is announced for August 24th and 25th at the Golden Gate Park courts in San Francisco. The tournament this year may not be quite up to championship form, for the reason that so many of our most promising young athletes have

been called to the service of their country; nevertheless, the list of entries contains some good names, and with E. E. Dodge and I. C. Steele still in the running some good sport may be looked forward to. In response to the circular sent out by Chairman Dodge of the Tennis Committee the following list of sixteen entries has been received:

P. M. Downing, W. G. Vincent, K. I. Dazey, S. J. Lisberger, E. A. Weymouth, R. E. Fisher, E. B. Henley, E. E. Dodge, A. L. Trowbridge, R. Kindig, E. J. Beckett, J. H. Parker, S. E. Carpenter, C. H. Delaney, P. E. Chapman, I. C. Steele.

The Tennis Committee has recently decided to change the conditions of this tournament in order that two previous winners of the "Pacific Service" trophy, namely, V. H. Jones and R. A. Monroe, may not be deprived of their tournament privileges by reason of their enforced absence "elsewhere." As our members well know, the cup has to be won three times in order to become the permanent property of any one individual, so that every one of the previous winners has a chance to secure this honor. In order, therefore, that everything may be fair and aboveboard the Tennis Committee has decided that the regular "Pacific Service" cup will not be played for this year. For this year's tournament a one-time trophy is offered as the prize, together with four other prizes of War Savings Stamps for the winner, the runner-up and the winners of the two semi-finals.

The following are the winners of the "Pacific Service" trophy to date: E. E. Dodge, August, 1911; R. E. Parr, August, 1912; E. E. Dodge, August, 1913; I. C. Steele, August, 1914; V. H. Jones, August, 1915; R. A. Monroe, August, 1916; R. A. Monroe, August, 1917.

A full account of the tournament is promised for our next issue.

The women of "Pacific Service" are not slacking while their fellow-workers are fighting.

The "Pacific Service" Red Cross Auxiliary, under the direction of Miss J. E. Doub, chairman, has turned in the following knitted and sewn garments for the months of May, June, July and August: 184 pairs of socks, 38 sweaters, 22 helmets, 20 nightdresses.

A number of the girls of the company are also alliliated with the Business Women's War Service, giving a certain amount of time each week to doing clerical work for the Red Cross.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

Private Sam Klinefelter, Company C, 117th Field Signal Battalion, writes from France and sends greetings to all of his friends in "Pacific Service." He says he is in the best of health and there is no reason why said friends should not write him some letters.

In honor of Sergeant Floyd Granger, Mr. and Mrs. John A. Britton entertained a party of ten on Tuesday evening, August 13th, at a theatre party following a dinner served at Tait's. The next day Sergeant Granger's many friends were surprised to read the announcement of his marriage at San Rafael to Miss Ethel Olson of San Francisco. Sergeant Granger was on a furlough of two weeks but gave no intimation that it was to be more than an ordinary visit home. He was formerly employed by the company in the Red-wood District in the capacity of meter reader, which he resigned in order to accept a position with Mr. Britton. Hearty congratulations followed the young couple when they left on Thursday for Camp Cody where Sergeant Granger is now stationed.

Mr. Barrett received the following letter from Captain A. R. Thompson, Com-

pany B, 29th Engineers. His letter discloses the following most remarkable "romance."

"I had a most pleasant surprise this evening on my return to barracks. As I came in an officer approached me and asked if I knew where he could get a drink of water. I invited him to my quarters and after satisfying his thirst we began a general sort of conversation which soon divulged the fact that my chance acquaintance trained at Camp Lewis and originally came from California and, to be sure, dear old San Francisco, and, more remarkable, was a former employee of my beloved 'Pacific Service.' Have I aroused your curiosity? Well, here is the man—Colonel George H. Canfield, formerly of my good friend Earl Henley's department. The singular thing is that neither of us knew the other in our military attire. The olive drab uniform and small campaign caps and Sam Brown belts, etc., give us a decidedly different appearance from the civilian garb which we formerly were wont to wear. And, oh, yes! that military air, too, must not be forgotten. Colonel Canfield is here for a couple of weeks at school. Needless to say, we were both delighted and exchanged news of home and friends.

"The fifth German drive is on here at present, but so far we are holding our own. You folks at home must prepare yourselves though for more loan drives and Red Cross and Y. M. C. A. drives before we will be able to report home that our work is finished. The Hun is not licked yet by a long, long shot. We will do it, however, in time.

"Love to you, and regards to all my friends."

Lieutenant E. N. Murphy, formerly connected with the Land Department, now with the U.S. Geological Survey, is in the Spruce Camp in the State of Wash-

> ington around Clallam Bay. From a letter received from

him we quote:

"When we first came I worked with Mr. Hamilton (the U. S. G. S. man) for two days because my chainman had not arrived. We were working along the road, Mr. Hamilton ahead and I next about three hundred feet ahead of Reynolds (Mr. H.'s chainman), when I heard a yell and whirled around to see a panther in the road about ten feet from Reynolds. It had jumped out of the forest into the road at him, but he was carrying a rod (which is a board fourteen feet long, painted black, white and red) and that seemed to puzzle the cat so he stopped to consider. My hair rose



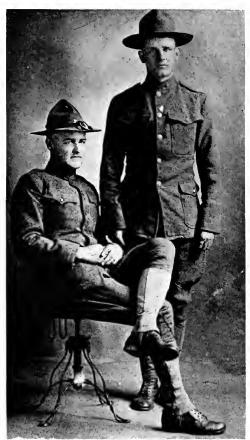
Sergeant Arthur E. Chandler, Aero Squadron No. 128, Kelly Field, San Antonio, Texas. (Formerly of Alameda County District.)

straight up. I knew Reynolds carried a pistol, so I started running in his direction and yelled "Shoot." When the panther saw me he turned and ran. By that time Reynolds had managed to get his revolver out and shoot once, but he could not be blamed if he was so scared that he could not hit anything. Natives tell us that such hasn't happened for fifteen years, so I guess we are safe now."

Lieutenant Francis I. Maslin wrote a long and interesting letter from his headquarters in France, which are near Tours. Lieutenant Maslin is commanding officer of the 452d Truck Company, and his duties consist of taking truck trains from the port of debarkation to the different sections

of the front. In this way he is having a wonderful opportunity to see France. He states, however, that his conscience hurts him somewhat because he is not in the fighting end of the game; in fact, he says he has not even been uncomfortable. He also pays his respects to the French peasants, who seem to have unlimited confidence in both the skill and good nature of his truck drivers. He says they stand around in little groups in the middle of the street and no amount of honking has the slightest effect on them. Lieutenant Maslin expresses his appreciation of the PACIFIC SERVICE MAGAZINE, and says that the pictures of California scenery in particular are of great interest to all the boys.

The following letter was received from Corporal Merkelbach, Company C, 322d Field Signal Battalion, who was formerly an operator in San Francisco District:



Seated, Jos. Butler, Jr., "A" Battery, 144th Field Artillery, A. E. F. Standing, Cecil L. (Tommy) Hornberger, same battery. (Both were employed in the office of the secretary, San Francisco District.)

"Have been in France over six weeks. The weather is fine here now. I saw about four hundred prisoners come in the other day, and there is plenty of action around here. have taken over the sector and are giving the Boches hell. We have just finished running a telephone line behind the lines and are waiting for the next detail to go out. Will probably see lots of action on the next job as we are working right through to the front."

In an interesting letter to Mr. Otto A. Knopp, W. N. Lindblad, formerly of the Laboratory, describes his life as an aviator in Rockwell Field, San Diego.

"It certainly is a great sensation to cut off your throttle, turn her nose

down and watch old Mother Earth come up to meet you, your wires whistling like a calliope, and the wind slamming you in the face at the rate of ninety miles per. Then, just as you think you are going to push your nose in the ground, level her off and skim along like a swallow just above the ground until you lose your momentum, then set her down gently like a hen on a nest." That, he says, is a theoretical landing, but he doesn't make them that way all the time. Sometimes he gets thinking of the old folks at home and the good old days when there were no wars and he forgets to level off soon enough, with disastrous results. Then the major keeps him on the ground for a few days or a week, the very worst punishment an aviator can get.

A postal card from J. W. Buzzell, Company D, 316th Engineers, A. E. F., states that he has arrived safely in France. Mr.

Buzzell was formerly employed by the Land Department.

H. J. Hansen, formerly of the Electric Distribution Department, Oakland, now with the 319th Regiment of Engineers at Camp Fremont, has been promoted to regimental supply sergeant, the next highest noncommissioned rank in the regiment.

As first-hand information regarding the work of the Marines in France, two interesting letters have been received from Private Jules Smith, formerly employed as operator in Redwood

District. Private Smith has seen a good deal of service and was wounded on April 13th. In one letter he says: "Just got back from the hottest front we have been on yet, where we drove the Huns back. The German soldiers without their big guns would be easy meat for us. The German is a coward by himself. There are no trenches on this front and we had to dig in to protect ourselves from the big gun fire. It surely was strenuous work. We had to lie in the holes we dug and pray that we wouldn't be hit by the next shell. And, believe me, they were coming over thick and fast. Some hit pretty close and threw dirt and stones in our faces and tore the tops of trees down from over our very heads." In a later letter he describes the fighting around Chateau Thierry. "We were going back to rest and got half way back and then they changed the orders and so here we are on our way back to the front. It seems as if they can't do any fighting without the Marines to back them up and hold the line. So you see we have to do most of the fighting on this front. At Chateau Thierry we sure did wade through those Huns and killed them by the hundreds. Our losses were large but nothing compared to theirs. Our artillery put up a fine barrage and just cut them to pieces. It was great. After working so hard we thought we would get a rest, but not yet." He makes a prophecy that seems to have come true: "I think the Huns will make one more drive and then it will be our turn to drive, and once we start driving, we won't stop until we hit Berlin."



Ensign Wm. Shearer, U. S. N. R. F. (Formerly of Marysville District.)

The following letter was received by Mr. Britton from Sergeant M. F. Campbell, U. S. Marine Corps:

"I have the honor to report that Henry Honnef, meter setter, employed in the Electric Department of the San Francisco District, was accepted for enlistment in the U.S. Marine Corps this date and transferred to the recruit depot, Marine Barracks, Navy Yard, Mare Island, Cal., where he will be put under nine weeks' training for duty overseas. It is the opinion of the undersigned that Private Honnef will make an excellent soldier of the sea, one of the 'First to Fight Boys.'

"In looking over the records on file at this office, I find that the name of Herbert Capelle, one of the boys from the Gas Arc Department, Fifth and Tehama Streets, San Francisco, enlisted in the U. S. Marine Corps, making the total of three, including myself, from the San Francisco District, Pacific Gas and Electric Company, that joined the U. S. Marine Corps in this great war."

A. R. Whifler, until last August accountant in Santa Rosa District, while not being called to the colors, being over the age limit, is also taking a certain part in the war. He went East, secured employment with Stone & Webster, big construction people of Washington, D. C., and has since gone across and is now in Paris. In regard to air raids and the shelling by the long-distance gun so much mentioned in the papers, he says: "Believe me, it makes a fellow duck for the cellar when those things go off." He states that it is beyond his ability to describe an air raid and the best way to learn is to "come over."

Among those cited by General Pershing as having been awarded distinguished service crosses for conspicuous acts of bravery is Private Jos. J. Gannon, "for courage and self-sacrificing devotion to duty in action against the enemy on April 12, 1918, voluntarily going with one comrade to an advanced post in a communication trench and with an automatic rifle holding back the advance of the enemy through the trench until his comrade was

killed and he was severely wounded." Private Gannon has also received the Croix de Guerre from the French Government. He was employed in the Bookkeeping Department until September, 1917, when he left to go with the Southern Pacific Company. For that reason his name does not appear on the roll of honor.

The veteran auditor of the San Francisco District, Mr. Jos. D. Butler, has two sons in the service, Joseph Jr., whose picture appears in this issue of the magazine and who is now in France, and Sergeant H. E. Butler, who has recently been appointed to take charge of the entire electric system at Camp Sheridan, with thirty-five men and two top sergeants under him.

Writing from England, R. D. Likely, formerly employed as operator in the Redwood District, tells that he has received a commission as lieutenant in the Aviation Corps of the American forces.

Another former employee of Redwood District, J. L. Fulton, has received a commission as lieutenant in the 42d Casual Corps, and is located at Camp Pike, Arkansas, where, he says, there are as many negro soldiers as there are white.

Word comes that Merl W. Bremer, formerly of Mr. Downing's office, has been advanced from second to first lieutenant. He is in Company A, 528th Service Battalion Engineers, and is now located at Camp Dodge, Iowa.

Excerpts from interesting letters written by F. L. Mix, former bookkeeper in the Solano District, now with the American forces in France, follow:

"I am now literally 'stripped for action,' as it were, just the clothes I can wear and the barest necessities in the way of toilet articles, etc. For that matter I have considerable doubt as to these latter being necessities any longer, as frequently days go by without a wash, and God only knows when I last had a bath. However, today it rained and my feet got thoroughly soaked, so I'm relieved of the responsibility of washing them for a time at least.

"For, you see—as you have no doubt surmised from my previous statements—I am now actually at the front. Never mind what part, but take it from me that it's a real, honest-to-God front and bears out all that Sherman said of war, as well as my own previous impressions. Nevertheless, it's a great satisfaction to me to be here and to know that when one has to do disagreeable things and go without certain comforts and pleasures, it is now being done for a definite purpose and we are actually accomplishing something and not fiddling around.

"So far my bit has been confined principally to the extensive and strenuous use of the now familiar pick and shovel, which I am beginning to learn are very useful implements of modern warfare, not confined by any means to the engineers, but indigenous to all branches of

the service.

"Although my presence in this neighborhood has been only for a short time, the noise of the 'whizz bangs' and the 'crumps' is already old stuff, as they are of frequent occurrence and we are well within reach. None have reached me as yet, otherwise I might be dictating this instead of writing it, and I find that the gnats and mosquitoes are more troublesome than shells.

"In my brief experience I have witnessed several air battles, a barrage at night, the bombardment of a village, and have been through gas. In this latter instance I removed my mask a little before it had entirely disappeared and got an idea of what it smells like and the effect it has on the throat.

"I can only say that I am tickled to death to be here after the long months of waiting and seeming uselessness, and as for the danger, well, one hardly stops to think about it after the first day or two. For that matter, though one has plenty of time to think, this life deadens thought, and the only thing you worry about is what they are going to have for mess or the probability of pay day within the next day or two."

"We are still at the same location and so far with no indication of a change in our program although now that the German offensive is on and the U. S. plans to take a hand—'Quien sabe?' As rule our days are pretty well taken up, as we have some sixty-odd horses to take care of and there is always an opportunity of joining the 'ancient and honorable order of muck rakers' at the stables if one feels inclined to disregard the bugle at reveille.

"We are comfortable and in no danger of starving as long as the canned Willie holds out, even if we don't have ham and eggs and ice cream every other day or so, and the only cause of complaint is that the United States is too far away and the Boches are not thoroughly licked yet. My address is still Battery A, 147th F. A., U. S. P. O. No. 718, A. E. F.

"In spite of German offensives, etc., we still continue the event tenor of our way, far in the rear, and gas bombs and other forms of 'kultur' still remain total strangers to us.

"However, we are now helping to pay off our debt to France, and I wish you would make an effort to find out how much we owe as we wish to be certain that they are not overpaid. In explanation: We have been putting in the past two weeks at hard labor, chiefly with the good old pick and shovel and 'Irish buggy' or, as the French call it, 'petit chariot.' Won't it be fine when I get back home with gnarled and hairy 'mitts' and a wheelbarrow waddle, and the folks ask, 'Well, what did you do in the war of 1918?' and I'll say, 'Oh, I helped repair the roads in France and a lot of little things like that'? Anyway, we'll be able to declare a policy of 'America for Americans' and chase all the Greeks and Hunkies and Japs on the section gang off of their jobs.

"A detachment of the battery is now located in the neighborhood of the target range, which is about ten miles from our former quarters, and in the intervals of firing, which is only one or twice a week, we pass our spare time from 6.30 a.m. to 5.30 p. m. repairing roads, juggling ammunition, digging sand, and other light housekeeping of that variety. Of course, I'll have to admit that we are in no danger of finding our way into an early grave through overwork, for hard work is not part of the soldier's religion, and we take our time about it with more or less 'repos,' depending upon the good nature of the sergeant in charge; nevertheless, we manage to accomplish about twice as much in the course of a day as the 'froggies' working alongside of us. Incidentally, we are quartered by the side of an old prison, so environment may have something to do with the nature of our work.

"Living conditions are about the same as when we first came. We have no complaints on that score, and health continues excellent, but at present they are prophesying two years more war; therefore I wish to impress on the American people the necessity of speeding up prep-

arations, as I have no desire to spend the rest of my life building roads."

The following "more truth than poetry" has been received from Earl Holdridge, formerly of Marysville District, now in the service of Uncle Sam.

REMINISCENCES OF A SOLDIER

I am sitting here and thinking of the things I left behind,

And I hate to put on paper what is running in my mind.

We've dug a million trenches and cleared ten miles of ground,

And a muddier place this side of hell I know it can't be found.

But there's still one consolation, gather closely while I tell,

When we die, we're bound for heaven, for we've done our hitch in hell.

We've built a hundred kitchens for the cooks to stew our beans;

We've stood one hundred guard mounts, and cleaned the camp latrines;

We've washed a million mess kits and peeled ten million spuds,

We've strapped a thousand blanket rolls and washed a million duds.

The number of parades we've had is very hard to tell,

But we'll not parade in heaven for we've done parade in hell.

We've shoveled a hundred paths to our damp and festering cots

And broke a hundred icicles from off our cotton socks.

We've marched a hundred thousand miles and made a thousand camps

And froze to death a thousand times pulling on our pants.

But when our work on earth is through, our friends behind will tell,

"When they died they went to heaven for they'd done their hitch in hell."

When final taps is sounded and we lay aside our cares

And do the very last parade right up the Golden Stairs,

And the angels bid us welcome and the harps begin to play,

When we draw a million canteen checks and spend them in a day—

It is then we'll hear Saint Peter tell us with a yell,

"Just take front seats, old 37th, for you've done your hitch in hell."

Earl Holdridge is now in France, a member of Company B, 37th Engineers.

"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF AUGUST 15th, 1918 Total Number

BOARD OF DIRECTORS—SAN FRANCISCO Livermore, Capt. Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Behrens, William Henry
Bohnert, Lieut, Arthur M.
Bremer, Lieut, Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Jesse Wilbert
Canfield, Major George H.
Cass, Chester R.
de Fremery, Leon
Dunne, Lieut, Edward A.
Dunton, Harold G.
Dyer, Fred E.
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L. Gray, E. L. Hammond, Everett E.

Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis. Fred Charles
Lindblad, Wm. Nathone
Lindstrom, W. J.
McDermott, Louis Wm.
Mel, Lieut. Washington B.
Mensing, M. B.
Monroe, Lieut. Robert A.
Murphy, Lieut. Elmo Neil
Nordling, Wm.
Osborn, Lieut. Norris W.
Parker, Charles G.
nia while on active duty in In Hansen, Ernest Axel

Regan, Arthur
Rossiter, Sidney Benjamin
Rubenstein, Frank Sam
Schuster, Lieut. John C.
Slaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard II.
Sultan, Lieut. Walter D.
Terhell, Corpl. Jacques
Thomas, G. M.
Trudrung, Harry
Watson, John
Wilkins, R.
*Wilhelm, Clarence
Williams, Lieut. Leroy C.
Wright, Lieut. Ernest M. Regan, Arthur

*Died of pneumonia while on active duty in France, January 23d, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Harold M. Barr, John Milton anderson, Harold M.
Barr, John Milton
Barrett. George
Bates, Byron M.
Belford, William
Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cormack, Douglas Leslie
Currier, J.
Deuschle, Fred W.
Ducco, Daniel
Dupuoy, Max
Erickson, William
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Frederickson, Stewart rederickson, Stewart Gay, Earl D.

LAMEDA COUNTY DIS
Hansen, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hunt, Lieut. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Sergt. Ivor
Klüuefelter, Sam
Knopla, Charles
Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt. George L.
Maslin, Lieut. Francis I.
Massoni, Dante
McKenzie, Malcolm M. McKenzie, Malcolm M. Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Oswald, James

Parsons, James Perkins, Erwin S. Pershing, Orton Lewis Pilcovich, Vincent Prefontaine, George J. Prefontaine, George J.
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Alhert
Sanborn, Wilfred M.
Sandoval, Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Skoglund, Elmer Skoglund, Elmer Smith, Stuart N. Stephens, Alden Raymond Thompson, Clark C. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B. Youngstrom, A. B.

Curtis, Ray E.

COLGATE DISTRICT

CHICO DISTRICT

Andrews, Crist C. Broyles, George R. Hale, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Hinds, Perry Mare

Allen, Robert Grover Altpeter, Chas. E. Beaumont, Floyd Burton Compton, John A.

Britton, Lieut. Emmet N. Hager, Charles W.

Hunt, Edward C Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

CONTRA COSTA DISTRICT Knight, Lieut. Remi Chabot Matheron, Frank Mellerup, Fred H.

DE SABLA DISTRICT

Kass, Leo M. Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

DRUM DISTRICT

Johnson, Samuel T. Lohse, Lieut. Marcel P.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Truitt, James O.

Mess, Licut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Meservey, Charles A. Pease, Howard

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James. Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Butterworth, William Z. Devlin, John A., Jr. Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J.

Gash, Lieut. Frank Taylor

Beloud, Leon C. Earl, George

Kent, James Cody

Beveridge, James

Bryggman, Emil W. Budalich, RO Crad Caussou, Jean Casey, T. Chase, Corpl. H. A Clausen, J. J. Cullen, John P.

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
Brady, Theodore Brewster, G. V. Brown, Jay G. Busses, George D.

Beeler, Joseph J. Black, Marion Derr, Harvey

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt, Harold S. Francouer, Raymond J.

Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Coulisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

ELECTRA DISTRICT

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. G. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT Krog, Corpl. John P. Maze, Norman E. Nair, Harold Newland, Fred Walton

MARIN DISTRICT Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

Patterson, A. Earl

MARYSVILLE DISTRICT

NEVADA DISTRICT

REDWOOD DISTRICT

Duane, Charles De Rosa, J. Esenman, Paul G. Gavin, Harold J. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E.

Hubbard, Sergt. H. W.
Johnson, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas McCabe, Alexander NAPA DISTRICT

Mayfield, James M. Osborne, Lieut. Butler J.

Hoffman, Andrew P. Jennings, Edward J. Johnson, Hjalmar Kirkpatrick, G. B.

Laughlin, Burton E. Likely, Lieut. R. D. Likely, H. E.

Newington, David O'Connor, Edward T. Olsen, Albert

Raymond, Harold A. Richeson, Merle C. Riggles, R. F. Roach, Martin L.

Melby, John Miller, J. E. Mullen, Ira J.

Snell, Verne C. Richards, James

PETALUMA DISTRICT

PLACER DISTRICT Leary, Jerry

Deloy, H.
Fulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
Haccourt, J. R.
Hiestand, C. R.
Hocking, Thomas J.

SACRAMENTO DISTRICT

Cameron, John Goyle, William Doyle Daigle, John M. Dick, Silas S. France, Fred Rhodes Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett

Logan, Raymond M. Mathews, Maurice L.

SACRAMENTO SUPPLY DISTRICT Dyer, John B Jones, Verne H. Kinz, William J.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter Haiden, Walter Inteman, R. Jacobsen, Earl D.

COLLECTION DEPARTMENT Oliver, Adrian Pierce Shea, Cornelius Thomas

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Stearns, O. J. Stearns, Ray Storm, Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William

Snow, Wilbur Roland

Taylor, Albert P. Taylor, Lieut. Cary P.

Fairchilds, John H.

Sutcliffe, Lieut, Harold T

Mengel, Henry Peers, G. A. Sampson, L. E. Sebben, J. E. Smith, Corpl. R. F. Strofeld, George

Ross, Chas. Archie Ross, Harold Lee Sanford, Walter W. Sartori, Adolph Sheehan, Parker J. Smith, Joseph Lee Smith, Myron M. Stiewer, Winlock W. Suggett, Archie Dean

Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Keating, Arthur Edward Lindsey, Elroy M. Suters, F. X. Wilson, Herbert E.

Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynaut Zimmerman, Lieut. Elmer

SAN FRANCISCO DISTRICT-Concluded.

ELECTRICAL DEPARTMENT

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt, Lyle Z.
Barker, Lieut. Guy A.
Beatie, Gerald
Biehl, Lieut. P. F.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F.
Clark, Lyle G.
Cook, Frank L.
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold
Durand, Milton J.
Eichbaum, Sergt. C. W., Jr Eichbaum, Sergt. C. W., Jr.

Estes, Sergt. McIville N. Fowler, E. H. Gardiner, Harold Anson Gaston, Corpl. J. B. Gerber, Harold Gerber, Harold
Glasson, Corpl. Lester G.
Grillin, John W.
Hagar, Lieut. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hildebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Madden, Joseph J. Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogdvie, Clarence H.
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robbins, Chas. W.
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F. Martin, William T.

Shields, Garrison F.
Siggins, N. J.
Southwood, Emerson C.
Spandau, Lieut. R. D.
Stohler, Adolph
Szczepanski, Edgar M.
Thompson, Capt. A. R.
Thompson, U. H.
Thompson, Lieut. William
Turner, John McBurney
Valach, J. P.
Vargus, Virgil H.
Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C. Wright, Howard C.

GAS DISTRIBUTION DEPARTMENT

Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

GAS MANUFACTURING DEPARTMENT

Ambler, J. R. Black, John Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A. Doherty, James Hallahan, Maurice

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Hanley, Leo J.

RECORDS DEPARTMENT Hughes, Percy Anthony

McDonald, Wm. John

SAN FRANCISCO SUPPLY DISTRICT

Abercrombe, Corpl. Donald Andresen, Carl Clark, Richard Clark, William

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John

Lang, R. T. McNab, Hugh D. Merlinjones, Clarence Newman, Ray J.

Perassa, Louis Queirolo, Chas. Quigley, James L.

SAN JOAQUIN DISTRICT

Faight, Forrest W. Flint, Sergt. Arthur P. Hunt, Lieut. Herbert Tevis McIsaac, Dan Olsen, Melvin L. Martin, Lieut. David G.

Riley, Norman Sidney

SAN JOSE DISTRICT

Bailey, Sidney F.
Bigger, Clyde A.
Billard, Wm. F.
Branch, Ira H.
Brewer, Lyman E.
Brown, Henry Edward
Burns, Leo
Caldwell, Lieut. Edward F.
Candello, Lorenzo
Carroll, Louis

Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Charles, Elect. Edgene I Coyle, Dan K. Erbentraut, Edwin Otis Faulkner, Chas. C. Fiman, Edward F. Frederickson, J. C. Frier, George S. Hale, Lieut. C. St. John Hall, Sergt. Evans E.

Harkness, T. J. Jensen, Elmer D Johnson, Lieut. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J. Riesen, Alvin

Rowe, Sergt. Ernest W.
Roy, Harvey Leon
Singleton, Paul
Sprung, Sergt. Stanley W
Stojanovich, Tony
Suess, Walter R.
Tarp, James P.
Terry, R. II.
Wright, Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B. Harris, Eli Raymond

Ross, Mervyn F.

Short, Ralph C.

Anderson, Sergt. Frederick E. Mix. Francis L.

SOLANO DISTRICT

Moore, George B.

Morgan, Mervin E.

VALLEJO DISTRICT Argabrite, Corpl. Walter N.

YOLO DISTRICT

Bischoff, O. E.

Grandquist, K.

Howard, Everett J.

THE FOLLOWING EMPLOYEES HAVE ENLISTED BUT HAVE NOT AS YET BEEN CALLED TO THE COLORS

DISTRICT McDonald, Hayward C. San Francisco — General Offices

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

E present below preliminary income account statements, in condensed form, for the month of July, 1918, for the seven months ended July 31st, 1918, and for the twelve months ended July 31st, 1918, contrasted with the same periods of the preceding year.

PRELIMINARY INCOME ACCOUNT

Month of July

	1918	1917	Increase	DECREASE
O. O. Win D.	e 1 024 020 20	01 554 000 10	970 070 14	
Gross Operating Revenue	\$ 1,934,832.32 1,382,906.59			
Net Earnings from Operation	\$ 551,925.73	\$ 511,635.25	\$ 40,290.48	
ADD Profits on Merchandise Sales and other Miscellaneous Income		64,112.80		\$ 10,922.00
Total Net Income	\$ 605,116.53	\$ 575,748.05	\$ 29,368.48	
DEDUCTIONS: Bond and other Interest	\$ 344,068.50 15,426.41 124,257.55	15,426.41		\$ 2,725.50
Total Deductions	\$ 483.752.43 \$ 121,364.10	\$ 486.042.17 \$ 89,705.88		\$ 2,289.74

SEVEN MONTHS ENDED JULY 31ST

	1918	1917	INCREASE	DECREASE
Gross Operating Revenue		\$11,365,408.05	\$1,179,730.07	
preciation, etc	8,264,825.03	7,073,221,08	1,191,603.95	
Net Earnings from Operation	\$ 4,280,313.09	\$ 4,292,186.97		\$ 11,873.88
ADD Profits on Merchandise Sales and other Miscellaneous Income	288,563.26	305,474.29		16,911.03
Total Net Income	\$ 4,568,876.35	\$ 4,597,661.26		\$ 28,784.91
DEDUCTIONS: Bond and other Interest	\$ 2,406,523.98 107,984.87 869,385.94	107,918.46	66.41	
Total DeductionsBalance	\$ 3,383,894.79 \$ 1,184,981.56			\$ 59,918.66

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED JULY 31ST

	1918	1917	Increase	Decrease
Gross Operating Revenue Expenses, including Taxes, Reserves for Depreciation, etc		\$ 19,215,176.62 11,742,557.94	\$ 1,777,934.39 2 303 736 72	
•	\$6,946,816.35			\$ 525,802.33
ADD Profits on Merchandise Sales and other Miscellaneous Income	491,436.12 \$7,438,252.47			\$ 573,481.39
Apportionment Bond Discount and Expense Accrued Dividends on Preferred Stocks		180,083.31 1,438,698.26	5,033.61 50,473.69	
Balance	\$1,636,676.90	\$2,433,650.76		\$ 796,973.86

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF JULY 31ST

July 31st	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	111,576	48,480	5,484		165,540
1908	125,117	57,198	5,731		188,046
1909	131,987	65,014	6,302		203,303
1910	143,689	75,813	6,655	l i	226,157
1911	157,587	92,287	7,135	18	257,027
1912	184,913	108,075	7,858	165	301,011
1913	199,743	122,854	8,277	242	331,116
1914	212,144	139,026	8,941	305	360,416
1915	224,690	158,684	9,521	357	393,252
1916	227,215	170,871	9,938	384	408,408
1917	236,315	186,021	12,454	416	435,206
1918	248,210	201,982	13,002	448	463,642
ain in 11 years	136,634	153,502	7,518	448	298,102

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month

> Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

AUGUST, 1918

No. 3

EDITORIAL

Director General McAdoo came out West recently on a trip whose main purpose was to afford him rest and recreation. While on the coast, however, his busy brain took note of the railroad situation, and upon his return to the nation's capital he expressed ideas which, if carried into effect, will entail a considerable draft upon the electric power resources not only of this but of every other State in the Union.

In other words, Mr. McAdoo has expressed himself in favor of the electrification of all the railroads in the United States. This is no new proposition. Railroad trains are now operated over considerable distances by electricity from the Atlantic seaboard to the Pacific Coast, with the result of much saving in coal for steam power, though east of the Rocky Mountains coal is largely employed in generating the electric current. But Mr. McAdoo has his eye upon the water-power resources of the country in his plan for railroad regeneration. He is quoted as suggesting general electrification with particular reference to "the most favorable points of the country where the static value of water is most obvious and the cost of making the change from steam to electricity would be comparatively slight."

This announcement may be taken as one of the most distinguishable signs that the United States Government is recognizing the need for an extended waterpower development throughout the country. What the public service corporations and the public spirited men of the country whose judgment has not been hampered by prejudice and false teaching have been declaiming for years is now to receive serious consideration at the hands of the power that is supreme in this present national crisis. The result must be action in some definite form. No other way out of the situation appears logical or even practicable. Concerning this the San Francisco Recorder, which has more than once editorialized upon the subject of the electrification of steam railroads, in a recent issue observes:

"There are millions of hydro-electric horsepower going to waste in the streams that flow through the public domain. There are so many of these that installations could be made sufficiently close together to eliminate the problem of wastage in transmission to a large degree. There is a sufficient demand for electric power from cities and towns along the routes of the railroads which could be turned, at the same time, into rights-ofway for high voltage power transmission lines to take the greater portion of the power not needed for railroad purposes. The saving resulting from the transformation generally from steam to electric power would be tremendous.

"This change is something that cannot be brought about in a short time. It would probably take twenty years to make the change completely; and yet is not the change desirable? Here is a cheap, clean power, developed from an element that never fails entirely, and the development of which would make the country more inhabited and more habitable through bringing the comforts of the cities to the country village and fireside."

The editorial closes with the following significant observation:

"The potential power for the electrification of the railroads of the country is at present pent up in the streams on the public domain and is being wasted."

There is the situation in a nutshell as it has been pointed out time and time again in this and other publications dealing with matters of public interest. Unfortunately, in the past there has been such a deal of misunderstanding, not to say misrepresentation, abroad in the land that the public, generally, has not been brought to see clearly where its best interests lay. In other words, the exposition of the development problem has been so beset with false issues that those whom it most concerns, namely, the people

themselves, have not had a fair chance to suggest or approve a reasonable solution of it. Now, however, that the United States Government is taking a hand in these great public matters, now that the bars are down and precedents are swept aside, practical results of the greatest importance to the entire country may be looked for.

Nothing could reveal the power situation in California more clearly than the following appeal to the public, issued from the headquarters of the recently constituted State Power Administration:

Conserve Electricity!

Patriotism demands that you save electricity for war industries. Northern and central California have a serious power shortage because of lack of rain during the past winter and the increased use of electricity by war industries.

These war industries must have power. There is not enough power for everybody at the present rate of consumption. It is up to you to save. Turn off your lights whenever possible and use lower power lamps.

This is one other thing you can do

in the great struggle.

H. G. BUTLER, Power Administrator.

In addition to this, the Power Administrator has issued the following order to twenty-nine light and power concerns operating in the northern section of California:

(1) Effective during August and September, 1918, except Saturdays, Sundays and legal holidays, no electrical energy shall be used: (a) For advertisements, notices, announcements, or signs designating the location of an office or place of business, or the nature of any business; (b) for external illumination for ornamentation of any building; (c) for lights in the interior of stores, offices or other places of business, when such stores are not open for business; (d) for excessive street lighting intended for display or advertising purposes.

This order shall not be con-(2)strued to prohibit the furnishing of electricity for such lights as may be required by law or public safety.

It is with regret that we have to record the decision of the officers and directors of the Pacific Coast Gas Association to postpone the annual convention scheduled, this year, for Los Angeles.

For twenty-five successive years the members of this association of live gas men of the Pacific Coast have met in convention somewhere in California to exchange ideas upon the subject of the gas industry. The result, so far, has undoubtedly been to the benefit of the industry in all its branches, technical as well as commercial. There has been an unusual esprit de corps among the members, and the annual gatherings, usually held by the seaside, have been looked forward to as more in the nature of family reunions than serious business conclaves. Existing conditions, of course, are responsible for the present action so sincerely deplored; but this action was not decided upon without serious consideration from all points of view, in the best interest not only of the association, but of the various companies and firms from which its membership is drawn. The letter sent out by President Kuster announcing this decision gives the following reasons for the postponement of the 1918 convention:

First: That on the Pacific Coast nothing new of extraordinary importance has occurred in the gas industry that would make a postponement of the convention particularly detrimental to the profession.

Second: That the shortage of man power requires everyone to be at his post of duty, and more especially is this felt when many from any one company are absent at the same time.

Third: The financial condition of all public utilities demands economies that would prevent them assuming the burden of the expense involved in sending men to the convention.

Fourth: The overburdened and crowded condition of the railroads throughout the country demands that all should co-operate with them to the extent at least of the elimination of all unnecessary travel.

In conclusion President Kuster expresses the hope that this action on the part of the governing body will not prevent the members at large from keeping up their active interest in the association. In the meantime, it is proposed that the sectional get-together meetings which were inaugurated some two years ago shall be kept up; so, in this way, it is hoped that members will be kept in touch with one another.

Tidings From Territorial Districts

Alameda County District

A prowling cat crawled through an open kitchen window in the house of one of the boys. It awoke the wife. She did not know, of course, that the noise was just an ordinary backyard cat. She naturally thought of a burglar. Her husband is a very intense sleeper. He had learned intenseness from a study of the Alexander Hamilton Course, loaned him by his friend, a blond gentleman in the Electric Department, and other such books on the art of reaching Fifty Thousand Per Year. Not that he, or his friend, is a financial climber, but for the mental development; just as one would go to a gym for physical prowess.

Had the prowling been in the parlor, he would have just turned over and gone to sleep. He would have slept on in bliss had he thought that some poor unfortunate had been driven to desperation for something to eat. But the thought of someone just deliberately getting into the kitchen, where all the good things were stored, just to make away with them, aroused him with ire. He bounded forth in the darkness. Without longitude or latitude to get his bearings he stove in a piano lamp. He felt the blow; he was appalled by the crash and crunch of broken glass. But time is essence of pursuit, so on he darted. He reached the kitchen and kettles and pans began to fall and bang. The wife knew the struggle was on. She had no fears for her husband; she knew his ability. She only implored he would not administer too severe a beating. Then she thought there might be two against him. She did not want to make an outcry; that would bring the police. If it were one single fellow, the beating would be sufficient punishment without incarceration. The situation became intense; while he below was witnessing the black form of a cat bound among pots and pans and out the window. The lights were lit and inventory taken. The sequel, by coincidence, is a poem which the boys have dedicated to him:

By Earl Ennis

"Swat the Fly!" the slogan goes. Beware the motto's guile!

I swatted as the order read, And broke:

- 3 vases (as was).
- 1 ormolu clock, 200 years old.
- 1 picture of "September Morn."
- 2 phonograph records, value \$4 each.
- 1 lamp shade.
- 1 chandelier with trimmings.
- I don't know where in the deuce the fly went!

Several know but—

Rene Antone Gentis will perhaps tell you who it was; he is good on dressing things up.

Can you beat it? Mr. Geo. Kirk, superintendent of Gas Distribution, has traveled 141,000 miles looking after the company's work. Such is his automobile mileage in this district, covering the use of four different machines. This distance stretched out into foreign lands would be six times around the world. If made one trip it would well tour many countries, revealing many wonderful sights. This would require almost two years of time traveling twenty miles an hour during Yet light or electricity the daylight. would traverse this distance in one-half of a minute!

The Gunn Shoe Company, Thirty-ninth and San Pablo Avenue, Emeryville, has installed a 2-horsepower McKee gas-fired steam boiler. This is used in the manufacture of a new product for making shoes. A heavy fiber canvas, with asbestos and special rubber cement, is placed in a press and heated to about 225 degrees F., where it is made into the shape of heavy leather soles. This product is made especially for mechanics who work on hot iron floors, also to keep from slipping. It makes a satisfactory substitute for leather. The automatic steam boiler is placed on the second floor, close to the press, giving a perfect uniform heat on account of the automatic control.

A schoolboy working vacation time quit his job, leaving the following note:

"My mother does not want me to work nights any more. I would like to ask you if you have any day positions open that you think I can fill. I will be over here late tomorrow morning. I am sorry to lose my night job but what ma says goes."

Miss Mary Leal says that another reason why girls like the soldier boys is because women are inclined toward uniform devotion.

R. S. Young Supply Co., 523 Fourth St., Oakland, is installing a No. 35A Stewart Metal Melting Furnace with No. 4 positive pressure blower. No. 40 crucible can be used in this furnace, which holds about 120 pounds of brass. This furnace is to take the place of three coke-oven furnaces. The gas consumption runs about 300 to 400 feet per hour. The time saved is quite an item, and handling the crucible above the ground makes it much easier to operate. Coke costs are much in excess of the gas as fuel. This is the second brass foundry in Oakland to use gas fuel. A. N. OTHER.

Yolo District

Owing to the fact that the Sacramento River is lower than at any other time since records have been kept, it has been necessary to lower quite a few of the pumps that are located along the river.

Reclamation District No. 108 has installed a boost pump at its main pumping plant, and the district has also installed a boost pump on the gravity irrigation system at Wilkins' Slough. The River Farms Company has installed two pumps on barges to maintain the water supply in the canals on the back part of its property. All of these pumps are taking water from the Sacramento River.

The California Producers Company is erecting a bean and grain warehouse and elevator at Knights Landing. It is to be equipped with hoists so that cars and boats can be loaded with bulk grain. Heretofore all grain shipments have been handled in sacks. Beans will be recleaned and shipped direct from the warehouse to eastern points, thereby saving the extra expense of local shipment to the cleaners that are located in Sacramento.

J. W. Coons.

QUARTER MILLION FOR YOLO COUNTY FROM THE P. G. & E.

The Pacific Gas and Electric Company will join in the constructive spirit predominant in Yolo County at the present time by the expenditure of a quarter of a million for improvements, within this county and Colusa.

This statement was made this morning by J. W. Coons, local manager for the big institution. Knights Landing will get a big substation and the county will be rewarded by a generous improvement in every condition.

Once connected with unlimited power the plan is to invite many new enterprises and pursue a plan of general development all along the line.

Manager Coons, in an interview today,

"The Pacific Gas and Electric Company is to construct at once a new substation at Knights Landing, which will be used to connect up a tie line that is to be built from that point to Colusa, where it will connect with the Northern California Power Company, who will through their lines transmit power from their northern lines from the California-Oregon Power Company. This interconnection is one of those that has been authorized by the California Railroad Commission to conserve energy and to use all of the available water power. The capacity of the lines and substation will be 8000 k. w. and under the terms of the contract 49,000,000 kilowatt hours will be delivered to the system of the Pacific Gas and Electric Company through the Yolo County substation.

"For Woodland and Yolo County this will mean that there will be two additional sources of power available in case of failure of any of the other lines."—Woodland Democrat, July 22, 1918.

Solano District

Woman Takes Place of Man in War Emergency

With many of the men of the country having enlisted or being drafted into the service, especially from the larger corporations and public service companies of the State, women are taking an important part in the conducting of the various enterprises throughout the country, taking the places vacated by the sterner sex.

One of the most noteworthy examples of this kind lies within the confines of the Pacific Gas and Electric Company, probably one of the largest service corporations in the State. From employees of the company 514 have entered the service of their country. And some of the places left vacant by them have to be filled.

Many of these places are being taken by women. In many of the offices throughout the various districts the company is employing women in the capacity of bookkeepers, meter reads and bill collectors. Perhaps the most spectacular instance of what the present war emergency has developed in woman-power is furnished by Mrs. C. R. Harlow of Cement, the accompanying views of which present her on duty at the substation at

that place.

Mrs. Harlow takes her regular shift as an operator at the substation at Cement, the site of the Pacific Portland Cement Company's great plant north of Suisun. Mr. Harlow has operated the switches at Cement for the past four years, taking some 6000 horsepower of electric energy from the high power transmission lines at 60,000 volts, stepping it down to 2000 volts for distribution over two circuits to the cement plant; in addition, dispatching current at 11,000 volts to the city of Suisun four miles away and supplying motive power for electric railway between Suisun and Vacaville.

No easy job for a man, but Mrs. Harlow has been added to the operating force and has been on the job since May 30th, finding time as well as ability to do her regular 8-hour shift while not neglecting her domestic duties of housewife.

The Pacific Gas and Electric is right behind any movement which tends to forward the successful conclusion of the war. They put all force behind the Liberty Bonds, the Red Cross, the Y. M. C. A. and the sale of War Savings Stamps. Nearly every office is an agent for the latter and they are doing a grand, noble work. The sale of Thrift Stamps from the local office of the company, of which Frank A. Starmer is agent, already amounts to over \$7500, which is a record in itself, and shows the spirit in which this company and employees are lending their every aid.—Solano Republican, August 16, 1918.

Marysville District

Farm Adviser William Harrison, Mrs. Mary Flannery, Mrs. J. E. Ebert, Councilman Swift and Secretary of the Chamber of Commerce C. H. Chace have returned from Chico, where they visited the United States Government plant gardens for the purpose of selecting shrubs, trees and vines which are to be planted in the mo-

tor park this winter.

The Marysville Auto Park is now open for tourists, and the popularity of it is evidenced by the numerous machines that make this town their night's stopping. "Pacific Service" is very much in evidence, since a gas hot-plate is installed in each of the twelve shelter houses, and electric lights direct the weary tourist.

Yuba City has grown from a country village to a real city. The streets are all being paved, Second Street having already been completed, making it a beauty spot of this vicinity, since many fine houses are located thereon. As further evidence of progress, the old town pump, which has supplied a drink to many a weary traveler, has been replaced with an up-to-date drinking fountain.

Landowners having property in the vicinity of Blava, a station on the Northern Electric near Ramada, have arranged to construct a co-operative warehouse there. The building is to cost \$25,000, and will be operated by the Oroville Realty Company. There is a large acreage of wheat and rice grown in the vicinity.

Marysville has been chosen as one of the regular stopping stations for the crosscountry flyers from Mather Field. One of the finest landing stations in the State has been provided for the aerial visitors at Knights Park. Major Fleet, of Mather Field, recently paid a visit to the park and before departing he gave an exhibition of a few of the difficult feats the Army aviators are called upon to do before they are allowed to tackle the Huns.

An entirely new farming experiment has been made this year on ranches south of Oroville, which increases greatly the supply of food and at the same time makes it possible to raise two crops from the same ground during one season. On the Keister ranch over sixty acres of tomatoes have been planted between the trees in the prune orchard. This land is producing over ten tons to the acre and is proving a wonderful success.

There is also a large acreage of tomatoes that is planted on the ground that has recently been cleared of a spinach crop. This land is producing over eight tons of tomatoes to the acre. The tomatoes produced are of an excellent quality. They are being purchased by the Sunical Packing Company.

The auto tourist in this district is well taken care of, since a first-class park is also maintained in our sister city, Oroville, and the tourist who arranges his schedule to make this his resting place can be assured of a hearty welcome. The park is located on the banks of the beautiful Feather River.

The Sunical Packing Company of Oroville are now running their olive plant as a fruit cannery, by which arrangement they are able to keep the plant in continuous operation. Cottages have been built to accommodate the many employees, thereby assuring the company of first-class help.

Work has been commenced on the 60-k. v. tie line between the Northern California Power Company's system and this company's line, the tap to be made a few miles north of Colusa, extending through Colusa, where meters and a switching station will be located, thence in a southerly direction where the tap to the Drum-Cordelia tower line will be made. The tie will make power from the Oregon line available for the war industries in the bay district.

E. C. Johnson.

Vallejo District

The members of the "Pacific Service" Social Club and friends journeyed to Glen Cove Park for a picnic on Sunday, July 28th. Everyone brought lots of "good eats," while the club furnished generous helpings of ice cream to everyone.

Swimming, wading, dancing and games and "just being lazy" formed the diversions of the day. Two or three of the men folks who are said to be skilled fishermen tried their luck, but owing to the fact that it was "full moon"—they had very poor success.

The officers and members of the club

are as follows:

R. L. Dunshee, president; Miss A. Gowdey, vice-president; Miss G. Canning, secretary; L. C. Pomber, treasurer and reporter; Miss E. Braghetta, A. J. Stephens,

A. E. Miller, J. W. Jeffers, J. W. Thomas, J. C. Canning, V. Von Hemm, E. Burton, E. J. Tyrell, A. Jose.

The company's new cottages at the gas plant for the gasmakers will soon be finished and will be occupied by Geo. Tyrell and E. Burton.

A. J. Stephens.

—— Marin District

A wedding of considerable interest to the community and to "Pacific Service" occurred on August 13th in the chapel of the Dominican College at San Rafael, when Lieutenant Eugene Trabucco and Miss Dorothy Douglass were united in marriage. The groom is the nephew of Mr. H. G. Ridgway, acting manager of Marin District, and has been employed by the company in the past during his college vacations as field draughtsman in the Gas Department. He is now in the aviation service and, after a short honeymoon in California, will report for duty in New York, whither his bride will accompany him.

Mrs. Trabucco is the daughter of Mr. Leon F. Douglass, the eminent inventor and capitalist of San Rafael, whose recent developments along the line of color photography have aroused much interest throughout the entire country. Mr. Douglass, it will be remembered, recently favored us with a display of his marvelous collection of colored motion pictures at a meeting of the "Pacific Service" Employees' Association, and all who witnessed them were greatly impressed with their beauty.

We take pleasure in reproducing herewith a letter received by Acting Manager Ridgway from Mr. Chas. Gulliver, captain of the guard, San Quentin Prison:

San Quentin, California, August 14, 1918.

Mr. Ridgway,

Mgr. Pacific Gas & Electric Co., San Rafael, California.

My dear Mr. Ridgway:

In behalf of the housewives of San Quentin Point, I desire to extend to you the most sincere thanks and appreciation of each and every one, also Mrs. Fowler, the food demonstrator, joins us in saying, "Thank you," for your big and generous spirit, in making possible the success of the demonstration of "Materials for Wheatless Breads and Muffins," by con-

tributing one of your splendid "New Gas

Ranges."

The demonstration was a grand success and proved very interesting and instructive and should prove an incentive to the housewives in being conservative, that they might in a small way help "Win" this world war by the conservation of foodstuffs.

Again thanking you, and in the event

that I may serve you, I am,

Yours for victory, through sacrifice and faith,

CHAS. GULLIVER,

Captain of the Guard, San Quentin Prison, San Quentin, California.

"Pacific Service" appreciates deeply the expression of thanks contained in the foregoing letter for the very small service rendered. H. G. Ridgway.

San Joaquin District

Mr. and Mrs. C. V. Wilbur were made very happy Monday, July 22d, by the arrival of a little son, who has been named Clair Vaughn Wilbur, Jr. The little fellow is the first child in the family and the first grandchild on both sides of the family. Mrs. Wilbur was formerly Miss Bess Pritchard. Mr. Wilbur is our inspector in the Water Department.

J. W. HALL.

Redwood District

SAVE ELECTRIC POWER

Owing to the small fall of rain and snow last winter the power companies of California are facing a 20 per cent shortage in the water necessary to produce electricity for the homes and industries of the State. In consequence of this the Power Administrator, whose business it is to see that the shipyards and other industries engaged in war work are supplied with all necessary power in order that their part in the great war may not be curtailed, has called upon the people of the State to conserve electric power to the utmost. The San Mateo trustees and the boards of our neighboring cities have already ordered a curtailment in the hours of burning of the street lights and the merchants have patriotically responded to the request to eliminate electric signs and window lights until the first rains fall and supply enough water to enable the powerhouses to produce

more electricity. It is up to the individual now to exercise care in the home and see that no unnecessary lights are burned and that every possible bit of current is saved for the industries which are working on ships and supplies that will aid in the winning of the war. It is not a hard thing for a householder to do, especially as the monthly bill will be reduced in proportion to the current saved. In this way you help the Government and yourself at the same time and suffer no hardship in the process.

The Pacific Gas and Electric Company have paid for advertisements in many papers appealing to the people, not to use more of their product, as most advertisements do, but to use as little as possible and save the rest for the war industries. The company gets a much higher rate for the current they sell for domestic purposes than they do for that sold to the industries and their patriotic action in urging their domestic consumers to use less of their product is an inspiring act of patriotism which reflects great credit on the big corporation and should certainly result in obtaining the hearty co-operation of every user of power in conserving in this grave period of need.—San Mateo Times, August 10, 1918.

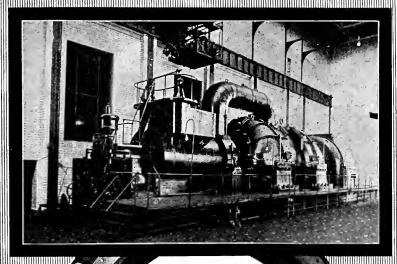
San Francisco District

Mr. H. P. Pitts, manager of the Commercial Department of the San Francisco District, severed his connection with "Pacific Service" on July 31st to accept a position in the Purchasing Department of the Bethlehem Shipbuilding Corporation.

On the eve of his departure the employees of Mr. Pitts' office assembled in Room 503, and Mr. Bostwick, the district manager, made a short speech, expressing regret that Mr. Pitts was leaving us, but assuring him that the good-will and good wishes of all for his success would go with him. Mr. Bostwick then presented Mr. Pitts with a gold watch tendered as a farewell token by the employees of the Commercial Department.

The District Commercial Department has since been reorganized and now bears the name of the "New Business Department," San Francisco District, Mr. F. S. Gray being appointed superintendent of the Electric Sales Bureau, Mr. Frank Talcott superintendent of the Gas Sales Bureau, and Mr. H. M. Crawford engineer Industrial Gas and House Heating Bureau.





Reliability
The illustration shows a

35,000 Kva.

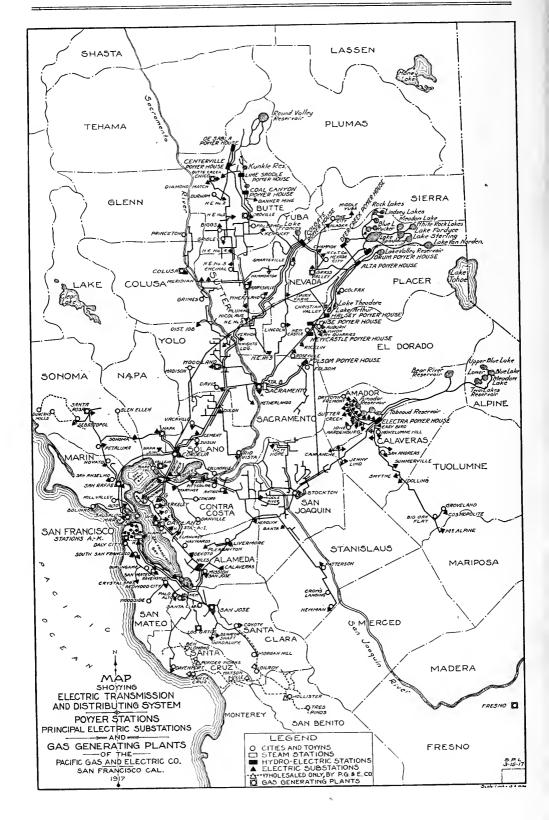
Westinghouse Cross-Compound
Turbine Generator

The successful operation of our Turbine
Generators of this capacity, and higher,
has fully demonstrated the reliability
and efficiency of the design.

Westinghouse Electric & Manufacturing Co. EAST PITTSBURGH, PA.

San Francisco Office, 1 Montgomery Street

When writing, please mention Pacific Service Magazine



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 460,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	D	RECTLY	INI	DIRECTLY	TOTAL			
	No.	Population	No.	Population	No.	Population		
Electricity	128	1,210,830	48	132,825	176	1 343 655		
Gas	51	1,219,690	2	8,600	.53	1,343,655 1,228,292		
Water (Domestic)	11	57,302	8	19,300	19	76,600		
Railway	1	76,000			1	76,000		

CITIES AND TOWNS SERVED BY COMPANY:

Place								
Alameda 30,000 4El Verano 400 MokelumneHill 750 75an Rafael 6,000	Place Pos	pulation	Place Por	oulation	Place Po	opulation	Place Po	nulation
Albany	¹Alameda	30.000	6Fl Verano	400			San Quentin	2 500
Alvarado			2Emoravillo					
Alviso.			-Emery vine				San Karaer	
Amador City			Esparto				Santa Clara	
Angel Fland			² Fairfax				⁶ Santa Cruz	13,600
Angel Island. 280 Fair Oaks. 300 Antioch. 2,000 Aptos. 300 Februs. 300 Newark. 505 Sausalito. 3,000 Aptos. 300 Folsom. 2,000 Newark. 505 Sausalito. 3,000 Aptos. 300 Press. 300 Newark. 505 Sausalito. 3,000 Shellville. 200 Aptos. 300 Shellville. 200 Aptos. 300 Shellville. 200 Aptos. 300 Shellville. 200 Shellville. 200 Shellville. 300 Shellville. 30	6-8Amador City	1.100	Fairfield	1.000	² Napa	6.500	² Santa Rosa	11,000
Antioch 2,000 4Felton 300 Newark 505 Sausalito 3,000 Aptos 300 Folsom 2,000 4Newcastle 505 Sebastopol 1,950 4Atherton 250 4Forestville 225 Newman 1,200 4Shellville 200 4Atherton 250 4Forestville 225 Newman 1,200 4Shellville 200 4Atherton 250 4Forestville 225 Newman 1,200 4Shellville 250 4Atherton 250 4Forestville 290 4Novato 400 Sheridan 250 4Barber 550 4Gliroy 2,900 4Novato 400 Sheridan 250 4Barber 550 4Gliroy 2,900 4Novato 400 Sheridan 250 400	Angel Island	280		300	3-8Nevada City		Saratoga	
Aptos 300	Antioch		6Folton		Newarls		Consolite	
Atherton 250	6A ptos		12-1				Sausanto	3,000
4-Auburn 2,800 Fresso 48,867 Niles 1,000 Sheridan 250 Belmont 375 Glen Ellen 900 40akland 225,000 Smartsville 300 Belvedere 550 2-Grass Valley 5,200 Oakley 200 480 Soquel 400 Bencia 2,400 Gridley 1,800 40ccidental 600 80 u.t.h. San Francisco 3,750 Bencia 2,400 Groveland 250 Pacheco 250 251 251 251 251 251 250 u.t.h. San Francisco 3,750			Foisom					
Farber Sol Gilroy 2,900 Novato 400 Smartsville 300 Farbellont 375 Glen Ellen 900 Voakland 225,000 Soquel 400 Soquel 400 Belvedere 550 2-8 Grass Valley 5,200 Oakley 200 Sonoma 1,290 Sonoma	Atherion							
Belmont. 375 Glen Ellen 900 Goakland 225,000 Soquel 400 Belvedere 550 Sergas Valley 5,200 Oakley 200 Sonoma 1,290 Benicia 2,400 Gridley 1,800 Geridley 5,000 Groveland 250 Francisco Sonoma 1,290 Gridley 1,800 Geridley 1,200 Geridley	%-%Auburn		¹Fresno					250
Selmont. 375	² Barber	500	Gilrov		⁶ Novato	400	Smartsville	300
Belvedere	² Belmont	375	Glen Ellen	900	² Oakland	225.000	(Soquel	400
Benicia 2,400 Gridley 1,800 Occidental 600 So u t h S a n Grimes 350 Octoville 5,000 Francisco 3,750 Octoville 5,000	Belvedere	550					Sonoma	
Ben Lomond	Renicio	2 400			[Occidente]		2C b . C	1,290
Pacheco 250 251 252	6Pen Lemond				Occidentar		Sontii Sau	2.750
Siggs			Grines				Francisco	3,750
Bolinas 200	Berkeley				Pacheco		2-1Stanford Uni-	
Broderick	Biggs				² - ⁷ Palo Alto		versity	2,600
Broderick	Bolinas	200	Hammonton	500	Paradise	500	*- *Stockton	42,000
Burlingame	Broderick	600	² Hayward	4.000		500	Suisun	
Campbell	2Rurlingame	4 000	2Hillehorough				Sunol	
Capitola. 275	Compbell		fillallister				Commercial:	
Cement	Campben		Tionister				Sunnyvale	
Centerville			°-°1one				Sutter City	
*Chico 15,000 *Kenwood 200 *Pike City 200 *Tres Pinos 300 *Colfax 500 *Kenwood 200 *Pipinole 1,800 *Vacaville 1,250 *Colma 1,800 Knights Land-ling Pipinole 1,800 *Vacaville 1,250 *Colusa 2,000 Knights Land-ling Port Costa 1,000 *Vineburg 200 Cordelia 300 *Larkspur 2,000 Port Costa 1,000 Walnut Creek 500 Corte Madera 350 Live Oak 300 *Livemore 2,500 Rio Vista 1,000 Warm Springs 200 Coyote 200 *Lomita Park 450 *Rocklin 900 Winters 1,200 Crockett 3,000 Los Altos 500 *Roseville 4,200 Woodside 225 *Paly City 5,500 Martinez 3,000 *Sacramento 7,000 *Yuba City 1,750 Davenport 300 Martinez	Cement		Irvington			7,500	6-⁵Sutter Creek	
Colica 15,000 Entitled 500 Pike City 200 Fire Finos 300 Colfax 500 Kenwood 200 Pinole 1,800 Vacaville 1,250 Vacaville 1,250 Colma 1,800 Kinghts Land Pittsburg 6,000 Vallejo 15,500 Vallejo 15,500 Vacaville 1,250 Concord 850 Larkspur 2,000 Port Costa 1,000 Walnut Creek 500 Cordelia 350 Live Oak 300 Vallejo Vallejo Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo Vallejo 15,500 Vallejo 15,500 Vallejo Vallejo Vallejo 15,500 Vallejo Vallejo Vallejo 15,500 Vallejo	Centerville		€_8 Iackson		² Piedmont		Tiburon	350
*Colfax 500 *Kenwood 200 *Pinole 1,800 *Vacaville 1,250 *Colma 1,800 Knights Land-ing Pittsburg 6,000 *Vallejo 15,500 *Colusa 2,000 ing 400 Pleasanton 1,500 Walnut Creek 500 Cordelia 300 *Larkspur 2,000 Port Costa 1,000 Walnut Creek 500 Cordelia 350 Live Cak 300 *Livelmore 2,500 Rio Vista 1,000 Watsonville 6,000 *Cotati 200 *Livermore 2,500 Rio Vista 1,000 Watsonville 6,000 *Coyote 200 *Lomita Park 450 *Rocklin 900 Woodland 5,000 *Crow's Landing 300 *Los Gatos 3,000 *Roses 900 Yolo 350 *Davisor 300 *Marine 3500 *San Anderas 750 Yuba City 350 *Davis 1,700 Martine	² Chico	15,000	² Kentfield	500	⁶ Pike City	200	Tres Pinos	300
*Colma 1,800 Knights Land- ing Pittsburg 6,000 2.43lejo 15,500 *Colusa 2,000 ing 400 Pleasanton 1,500 40lejo 15,500 Cordelia 350 *Lixebrur 2,000 Port Costa 1,000 Warm Springs 200 Corte Madera 350 Live Oak 300 *4Richmond 16,500 Warm Springs 200 *Liver Oak 300 *Liver More 2,500 Rio Vista 1,000 Watsonville 6,000 Coyote 200 *Lomita Park 450 *Rockin 900 Winters 1,200 Crow's Landing 300 *Los Altos 500 *Roseville 4,200 Woodland 5,00 *Paly City 5,500 *Basin 250 *Sacrament 76,000 *Yolo 350 Davisi 1,700 Martinez 3,500 *San Arselmo 3,000 *Yolo 350 Davis 1,700 Martinez 3,500 *San Fr	Colfax	500	6Kenwood	200	⁶ Pinole	1.800	6Vacaville	
*Colusa. 2,000 ing. 400 Pleasanton. 1,500 *Vineburg. 200 Concord. 850 *Larkspur. 2,000 Port Costa. 1,000 Walnut Creek. 500 Cordelia. 330 *Live Oak. 330 *Live Gak. 300 *Wedwood City. 4,200 Watsonville. 6,000 *Cotati. 200 *Live more. 2,500 Rio Vista. 1,000 Wheatland. 500 Coyote. 200 *Lomita Park. 450 *Rocklin. 900 Winters. 1,200 Crow Standing. 300 *Los Altos. 500 *Roseville. 4200 Woodland. 5,000 *Davis Landing. 300 *Los Gatos. 3,000 *Ross. 900 Yolo. 350 *Davis Landing. 300 *Marine. 250 *Sacramento. 76,000 Yolo. 350 *Davis Landing. 300 *Marine. 3500 *San Andreas. 750 Yuba City. 1,750 Davis	2Colma	1 800			Pitteburg		2 6Volleie	
Concord	2Coluge			400			437:	
Cordelia	-Corusa						vineburg	
Corte Madera 350	Concord		Larkspur					
2-Cotati 200 *Livermore 2,500 Rio Vista 1,000 Wheatland 500 Coyote 200 *Lomita Park 450 *Rocklin 900 Winters 1,200 Crowett 3,000 *Loomis 450 *Rocklin 900 Woodland 5,000 Crow slanding 300 *Los Altos 500 *Los Roso 900 Woodland 225 'Daly City 5,500 *Los Gatos 3,000 *Ross 900 Yoloc 350 Davins 1,700 Madison 250 *Sacaramento 75,000 *Yuba City 1,750 Davis 1,700 Martinez 3,500 *San Anselmo 3,000 *Yuba City 1,750 Decoto 300 *Marysville 6,000 *San Francisco 580,000 and Towns.1,422,522 *Drytown 1,200 Mayfield 1,100 *San Francisco 580,000 and Towns.1,422,522 *Durham 300 *Millbrae 300 *San Lenadro <td>Cordelia</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Cordelia							
2-Cotati 200	Corte Madera.	350	Live Oak		² -6Richmond	16,500	Watson ville	6.000
Coyote	2-6Cotati	200	Livermore	2.500	Rio Vista	1.000		500
Crockett. 3,000 4Loomis 450 4Rodeo 300 4Woodland 5,000 Crow s Landing 300 Los Altos 500 4Roseville 4,200 4Voodland 225 4Volo 225 4Volo 4,000		200	Lomita Park	450	⁶ Rocklin	900		
Crow's Landing 300					Rodeo	300	Woodland	
Policy P								
Danville			Los Aitos				woodside	
Davenport. 300 *Mare Island. 500 San Andreas. 750	Daiy City						Yolo	
Davis							² Yuba City	1,750
Decoto								
Decoto	Davis	1.700	Martinez	3,500	² San Anselmo		-	
Duncan's Mills 200 Mayfield 1,100 San Francisco 580,000 and Towns 1,422,522 2,522 2,523 2,534	Decoto	300	² Marysville	6.000	² San Bruno	1.500		
Drytown	Divon				2San Francisco		and Towns. 1	422.522
Pouncan's Mills 200 Meridian 225 48an Juan 550 Add Suburban 500 400,586 500 500 750 600,586 600,58	Drutown						una rommonn	,,
Durham 300 Millbrae 300 San Leandro 5,000 Population 400,586	Diytown						Add Suburban	
4-Outch Flat. 750 Mills 350 San Lorenzo. 400 4-Eldridge 500 Mill Valley 3,200 San Martin. 200 4-El Cerrito 1,200 Milpitas. 350 San Mateo. 6,000 Total Popula-								400 586
*Eldridge 500 Mill Valley 3,200 *San Martin 200 *-El Cerrito 1,200 Milpitas 350 *San Mateo 6,000 Total Popula-	*Durham		² Millbrae				ropulation	100,300
*Eldridge 500 Mill Valley 3,200 *San Martin 200 *-El Cerrito 1,200 Milpitas 350 *San Mateo 6,000 Total Popula-			Mills				_	
² - ⁶ El Cerrito 1,200 Milpitas 350 ² San Mateo 6,000 Total Popula-		500	Mill Vallev	3,200	San Martin	200		
	2-6Fl Cerrito					6,000		
Mission San Fabio	Flmira							.823.108
	E	330	mission can jose	500	Cun addo	500		

Unmarked—Electricity only.
—Gas only.
2—Gas and Electricity.

2—Gas, Electricity and Water. ←Gas, Elect. and St. Railways. 5—Electricity and Water. Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	1,982
Number of Gas Consumers24	8,210
Number of Water Consumers	3,002
Number of Steam Consumers	448
Total number of consumers $\dots \overline{46}$	3,642

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

EVERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y. Ten Eyck Building ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORE, MD.
Munsey Building
Boston, Mass. 10 State Street Buffalo, N. Y. Marine Bank Bldg. CHICAGO, ILL. 137 So. La Salle Street CINCINNATI, OHIO
FOURTH NATI. Bank Bldg.

CINCINNATI, OHIO
FOURTH NATI. BANK Bldg.

MINNEAPOLIS, MINN.
McKnight Building

DAYTON, OHIO Mutual Home Bldg. DENVER, COLO.
First National Bank Bldg. New Orleans, La.
301 Baronne Street First National Bank Bidg.
DETROIT, MICH.
147 Griswold St.
HARTFORD, CONN.
CONN. Mutual Bidg.
INDIANAPOLIS, IND.
Fletcher Sav. & Trust Bdg.
KANSAS CITY, Mo.
Republic Building
Los Angeles Cal.
PORTLAND, ORE.
PORTLAND, ORE.

Newark, N. J. 790 Broad Street PHILADELPHIA, PA. 1421 Chestnut Street Pittsburgh, Pa. Farmers Bank Bldg. 396 Congress Street Portland, Ore. Railway Exchange Bldg. Providence, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. San Francisco, Cal. 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass. Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W. WILKES-BARRE, PA. Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
Henry E. Bothin
John A. Britton
W. H. Crocker
F. G. Drum

JOHN S. DRUM
F. T. Elsey
D. H. FOOTE
W. G. Henshaw
A. F. Hockenbeamer

JOHN D. MCKEE
JOHN A. McCandless
C. O. G. MILLER
NION R. TUCKER
George K. Weeks

OFFICERS

										· · · · · · · · · · · · President
										Vice-President and General Manager
A. F. Hockenbeamer										Second Vice-President and Treasurer
										. Secretary and Assistant Treasurer
										Assistant Treasurer
Chas. L. Barrett .	•	٠						٠		Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM												Consulting Engineer
												Attorney
R. J. Cantrell .												Property Agent
J. P. Coghlan												Manager Claims Department
C. P. Cutten												Attorney, Rate Department
K. I. DAZEY												Manager of Collections Chief Engineer Electric Department
P. M. Downing .											C	Chief Engineer Electric Department
E. B. HENLEY												Manager Land Department
												Purchasing Agent
J. P. JOLLYMAN .												Engineer Electrical Construction
												Chief Engineer Gas Department
F. S. MYRTLE												. Manager Publicity Department
L. H. NEWBERT .	٠	٠	٠	•	٠	٠	٠	٠	•			Manager Commercial Department
												Superintendent of Supplies
W. G. VINCENT, JR.										٠		Valuation Engineer

DISTRICT MANAGERS

D13	IKIGI MANAGERS	
DISTRICT	HEADQUARTERS	MANAGER
Alameda County	. Oakland	F. A. LEACH, JR.
Снісо	Chico	H. B. HERYFORD
COLGATE		
Contra Costa	Martinez	Don C. RAY
DE SABLA		
Drum		
Electra		
Fresno	Fresno	M. L. NEELY
MARIN	. San Rafael (Actin	g) H. G. RIDGWAY
MARYSVILLE		
Napa		
Nevada		
Petaluma		
Placer		
Redwood		
Sacramento		
San Francisco	San Francisco	HENRY BOSTWICK
San Joaquin		
San Jose	San Jose	J. D. Kuster
Santa Rosa	Santa Rosa	M. G. HALL
Solano	. Dixon	. C. E. Sedgwick
Stanislaus	. Newman	V. A. WIDENMANN
Vallejo		
Yolo		

Pacific Service Magazine

Volume X



Number 4

Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for September, 1918

VIEW ON BUTTE CREEK, DE SABLA DISTRICT .						Fr	ont	isp	oiece
STEAM	V.	R.	H	ugl	ıes				99
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION									108
THE "PACIFIC SERVICE" ROLL OF HONOR									113
OVER THE TOP (OF THE NET)	S.	Ε.	Ca	trp	ent	er			116
THE FINANCIAL SIDE OF "PACIFIC SERVICE"	A.	F.	H	ock	en	beo	ımı	er	118
EDITORIAL									120
TIDINGS FROM TERRITORIAL DISTRICTS									122

Index to Advertisers

Allis-Chalmers Mfg. Co iii	Sprague Meter Co
Chaplin-Fulton Mfg. Covi	Standard Underground Cable Co
General Electric Coi	Steiger & Kerr Stove & Foundry Co i
Graham, Jas., Mfg. Coiv	Welsbach Companyv
National City Company 4th page cover	Western Engineering Publishing Co ii
Pacific Meter Co	Western Pipe & Steel Co. of California iv
Pacific Telephone and Telegraph Co vi	Westinghouse Electric & Mfg. Co vi
Pelton Water Wheel Coiv	Wood, R. D., & Co i



View on Butte Creek, above head dam, De Sabla power development of "Pacific Service."

PACIFIC SERVICE MAGAZINE

Volume X

SEPTEMBER, 1918

Number 4

Steam

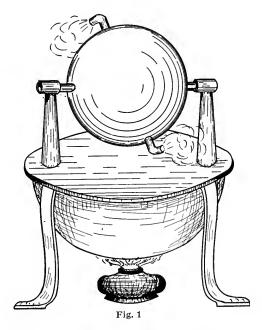
By V. R. HUGHES, Safety Engineer

THERE seems to be misconception in the minds of a great many people as to the true origin of the steam engine. James Watt has been pretty generally credited with the discovery of utilizing steam to do mechanical work, the idea coming to him through observing the bobbing up and down of the lid on his mother's teakettle; however, that is just a story and nothing more. As a matter of fact, the idea is of very much older date, as will be seen from the following relation of historical fact.

The first steam engine or steam-operated device that we have any record of was made by Hero, a mathematician of Alexandria, about the year 130 B. C. This has been described as a revolving spherical vessel pivoted on a central axis and supplied with steam through one of the pivots, as shown in Fig. 1. There has been some question, however, as to whether Hero generated the steam in a separate stationary receptacle, as portrayed in the illustration, or whether the steam was generated in the revolving spherical chamber and allowed to escape through the reaction nozzles at opposite sides of the shaft, as suggested in Fig. 2.

From 130 B. C. until A. D. 1629, or nearly 1700 years, the subject of steam power lay dormant, but in 1629 Giovanni Branca, an architect of Lorreto, Italy, made a steam engine by impinging a jet of steam against blades or vanes of a wheel similar to those of a water wheel, as shown in Fig. 3.

Both Hero's and Branca's engines were not much more than toys, yet it is worthy of note that the principles employed in either are the principles employed in our largest steam turbines of today. To Edward Somerset, second Marquis of Worcester, appears to be due the credit of making the first useful steam engine. Its purpose was to raise water, having a pair of displacement chambers from each of which alternately water was forced by steam from an independent boiler, or, perhaps, by applying heat to the chamber itself while the other vessel was allowed to refill. Lord Worcester's description of the engine in his "Century of Inventions"



(1663) is obscure and the drawings are extinct. It is not clear whether the suction of a vacuum was used for raising the water as well as the direct pressure of steam.

An engine of two horsepower was in use at Vauxhall in 1656, and the wells at Raglan Castle contain traces of another, but neither Worcester's efforts nor those



Fig. 2

of his widow were successful in assuring the economical success of his engine. This success was reserved for Thomas Savery, who in 1698 obtained a patent for a water-raising engine, as shown in Fig. 4.

The Savery steam-actuated pumping engine consisted of two oval chambers, A, into which steam was admitted and condensed alternately.

The operation was to admit a quantity of steam to one of the chambers, A, then open a cock connected to a cold water tank and allow the cold water to flow over the chamber, condensing the steam contained in the chamber and forming a vacuum, thus drawing or sucking the water from the sump below through the suction check valve, D, then admitting steam to the chamber, forcing the water out through the check valve, B, on the delivery pipe. This operation was kept up alternately between the two chambers, giving an almost constant flow of water.

It appears that Savery used two boilers, one boiler for furnishing steam to the pump and the other for furnishing water to the main boiler. The process of operation of the second boiler, E, appears to

have been that this boiler was filled with water and a fire started under it, creating a pressure rise to or a trifle above the pressure in the main boiler and thereby forcing water into the main boiler. The cocks at G G are try cocks for determining the height of the water.

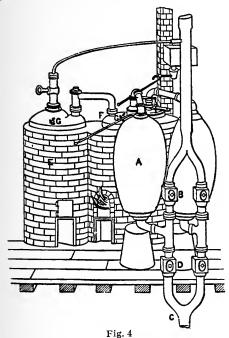
In 1690 Denys Papin, a Frenchman, who ten years before had invented the safety valve as an adjunct to his "digester," suggested that the condensation of steam should be employed to make a vacuum under piston previously raised by the expansion of steam. Papin's was the earliest cylinder-and-piston steam engine, and his plan of using steam was that which afterwards took practical shape in the atmospheric engine of Newcomen. But his scheme was made unworkable by the fact that he proposed to use but one vessel as both boiler and cylinder. A small quantity of water was placed at the bottom of a cylinder and heat was applied. When the piston had arisen the fire was removed, the steam was allowed to cool, and the piston did work in its down stroke under the pressure of the atmosphere. After hear-



Fig. 3

ing of Savery's engine in 1705 Papin turned his attention to improving it, and devised a modified form, as shown in Fig. 5.

The displacement chamber, A, was a cylinder with a floating diaphragm or



piston on the top of the water to keep the water and steam from direct contact The water was dewith one another. livered into a closed air vessel, B, from which it issued in almost a continuous stream against the vanes of a waterwheel. After the steam had done its work in

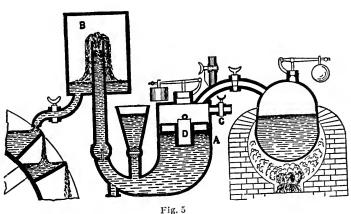
displacement the chamber it was alescape lowed t o through the cock, C, to the atmosphere.

Papin's engine was, in fact, a non-condensing single-acting steam pump with steam cylinder and pump cylinder in one. A curious feature of it was the heater, D, a hot mass of metal placed in the diaphragm or piston for the purpose of keeping the steam dry.

Among the many inventions of Papin was the boiler with an internal fire box, the earliest example of a construction that is now extensively used.

About this time a new inventor appeared who made the piston engine a practical success by separating the boiler from the cylinder and by using, as Savery had done, artificial means to condense the steam. This was Newcomen, who in 1705 with his assistant, Cawley, gave the steam engine the form as shown in Fig. 6.

Steam was admitted from the boiler to the cylinder, allowing the piston to be raised by heavy counterweight on the opposite side of the beam. Then the steam valve was closed and a jet of cold water allowed to enter the cylinder and condense the steam. The piston was consequently forced down by the atmospheric pressure raising the pump rod on the opposite end of the beam. The next entry of steam expelled the condensate from the cylinder through an escape valve, the piston being kept tight by a layer of water on its upper surface. Condensation was at first effected by cooling the outside of the cylinder, but the accidental leakage of the packing water past the piston showed the advantage of condensing by a jet of injection water and this plan took the place of surface The engine used steam condensation. whose pressure was a little, if at all,



greater than that of the atmosphere. About 1711 Newcomen's engine began to be introduced for pumping mines, and in 1713 a boy named Humphrey Potter, whose duty it was to open and close the valves of an engine he attended, made the engine self-acting by causing the beam itself to open and close the valves by suitable cords and catches. Potter's rude device was simplified in 1718 by Henry Beighton, who suspended from the beam a rod called the plug-tree, which worked the valves by means of tappets. By 1725 the engine was in common use in collieries, and it held its place without material change for about three-quarters of a century.

In 1763 James Watt, an instrument maker in Glasgow, while engaged by the university in repairing a model of Newcomen's engine, was struck with the waste of steam to which the alternate chilling and heating of the cylinder gave rise. He saw the remedy in keeping the cylinder as hot as the steam that entered it. With

this in view he added to the engine a new organ—an empty vessel separate from the cylinder into which the steam should be allowed to escape from the cylinder, to be condensed there by the application of cold water either outside or as a jet inside. To preserve the vacuum in his condenser he added an air pump, as shown in Fig. 7.

Although he covered the top of his engine cylinder and admitted steam above the piston at atmospheric pressure, still the engine was a single-acting condensing engine, similar to that of Newcomen's.

In 1781 Watt describes his "sun-and-planet" wheels and other methods of making the engine give continuous revolving motion to a shaft provided with a flywheel. He had invented the crank and connecting rod for this purpose, but meanwhile this idea had been patented by one Pickard, and Watt, rather than make terms with Pickard, made use of his "sun-and-planet" motion until the patent on the crank expired.

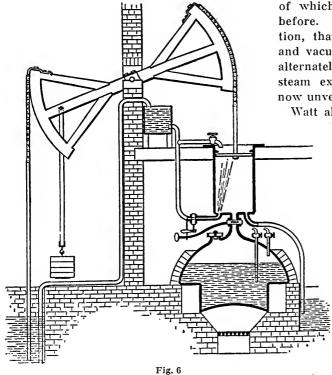
In 1782 Watt patented two further improvements of the first importance, both of which he had invented some years before. One was the use of double action, that is, the application of steam and vacuum to both sides of the piston alternately. The other was the use of steam expansively within the cylinder now unversally used in all steam engines.

Watt also connected the valve gearing

to the walking beam of the engine and installed a throttling governor, belt driven from the main shaft.

I have used this history of the steam engine leading up to the generation of steam, as most of the earlier steam engines were a combination engine and boiler, that is, the steam was generated in some of them within the power cylinder itself.

Steam in the earlier days was known as water vapor and today is known by the chemist as H₂O plus heat, that is,



hydrogen two parts, oxygen one part. This exists in three forms, ice, water and steam. Below 32 degrees F. H₂O assumes a solid form known as ice. Above 32 degrees F. (at atmospheric pressure, that is, 14.7 pounds at sea level, barometer 30) to 212 degrees F., it exists as water. With the same atmospheric condition, above 212 degrees F. it changes from a solid form, known as water, into steam.

If we place one pound of water in a cylinder at 32 degrees F. or slightly above, keeping the cylinder absolutely vacuum tight, drawing the piston out to a displacement of 3333 cubic feet and maintaining the temperature at 32 degrees F., we shall have a steam or vapor pressure of .089 pound.

At 212 degrees F., with atmospheric pressure of 14.7 pounds, one pound of water turned into steam has a volume of 26.36 cubic feet.

At 329 degrees F., 101.9 pounds absolute pressure, one pound of water evaporated into steam has a volume of 4.28 cubic feet, and with increased temperature and pressure the volume decrease.

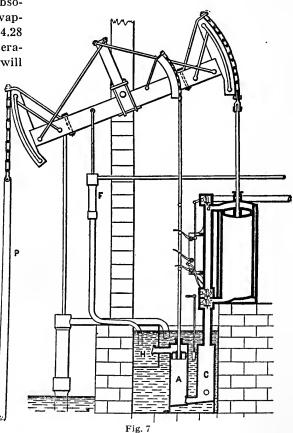
The above pressures have been given as what is known as absolute pressures, that is, the pressure measured from an absolute vacuum.

The pressures ordinarily used, such as you see indicated on the steam gauges of the boilers, are called gauge pressures and are pressures over and above the atmospheric pressures which are ordinarily 14.7 pounds per square inch at sea level.

Steam exists in different conditions. It may be wet, that is, carrying in suspension small particles of water, or it may be dry, or what is known as saturated steam, that is, all the water has been changed from water into steam, or it may be superheated by further adding heat units after it has become saturated steam.

Steam cannot be materially superheated while it is in contact with the water in the boiler, on account of the heat units forced into the saturated steam being transmitted to the water, raising the temperature of the water and turning it into saturated steam.

In expanding a working substance such as water and steam isothermally under constant pressure and constant temperature it is necessary to add heat to the substance; that is, in other words, to increase the volume of the substance, retaining its pressure and temperature, it is necessary to add heat to it, as shown in Fig 8, which portrays a cylinder containing the working substance of water and steam, a weighted piston that is free to move up or down within the cylinder. Applying heat to the working substance will cause the piston to rise, increasing



the volume of the working substance but not increasing its pressure or temperature.

In compressing steam isothermally under constant pressure and temperature it is necessary to extract heat from it.

When expanding steam adiabatically you reduce or lessen its pressure and temperature, as shown in Fig. 9, which shows a horizontal cylinder with a movable piston. By filling the closed space in the cylinder with steam and drawing the piston out towards the end of the cylinder the pressure and temperature will be reduced as shown by the adiabatic line of the diagram.

In compressing steam adiabatically you increase its pressure and temperature.

I mention these two methods of expanding steam to make clear the difference

between the generation of steam in the boiler and the extraction of the heat units contained in the steam in doing useful mechanical work, as in steam engines.

In the boiler we expand the working substance isothermally, keeping its pressure and temperature constant by adding heat. In the steam engine we expand the steam adiabatically by reducing its pressure and temperature, changing heat units into mechanical work, that is, by extracting heat from it.

It is not my intention to go deeply into detail on the use of steam, but a few remarks on the generation of steam, giving a brief description of the most commonly used steam generators or boilers as used in "Pacific Service" gas plants, together with some of the losses, showing common where the heat units are applied and lost, may not be amiss here.

There are many kinds of boilers in use, but the commoner ones may be divided into two classes, according to the location of the fire. They are called externally fired if the combustion of the fuel is effected entirely or mainly outside of the boiler, and they are called internally fired if the combustion occurs in such a way that the fuel bed of the furnace is largely or completely enclosed or surrounded by the boiler itself.

Most of our company's boilers are externally fired and they can be divided into two classes, the fire tube and the water tube. In the fire tube or return tubular boiler, as shown in Fig. 10, the boiler is within a brick setting and the fire is beneath the boiler, and the products of combustion pass over a bridge

wall to the back of the boiler and return through tire tubes through the boiler and pass out and up the stack. This type of boiler has been in use for many years and for all-around general purposes is, if well built and enclosed in a substantial, tight brick setting, a very good and economical boiler and easily inspected and cared for.

Of water tube boilers we have three different types in use. The Babcock and Wilcox boiler consists of a horizontal drum connected by headers to incline water tubes, the fire being underneath or below the tubes, and all products of combustion passing up around the tubes over a vertical baffle, down around the tubes under another baffle and then up around the tubes and out the back of the boiler to the stack, as shown in Fig. 11. This is one of the earlier types of water tube boilers and has

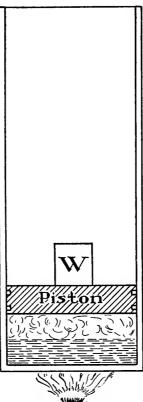
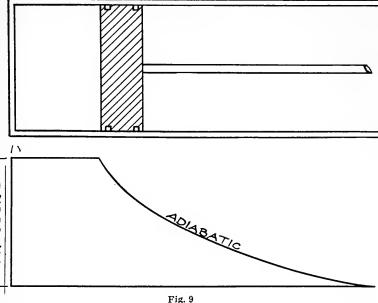




Fig. 8

been on the market for many years without anv great changes in its general design.

Another type is the Heine boiler with an incline drum and incline. tubes. The tubes are attached between water legs Q attached to each in end of the drum, or drums, and furnace arrange- a ment is similar to that of the Babcock and



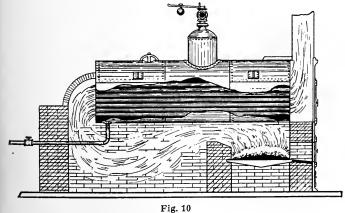
Wilcox except that in most cases baffling is horizontal, made of fire brick tile, placed on top of the tubes. The products of combustion pass over a bridge wall along the lower row of tubes to near the rear end, then up around and along the rest of the tubes to near the front, thence back along the tubes and the drum, or drums, passing out around the drum, or drums, to the stack, as shown in Fig. 12.

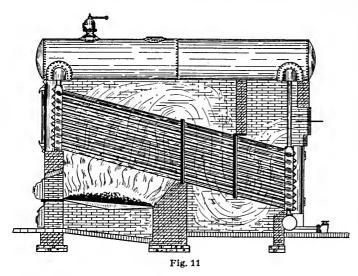
Another type is the Sterling boiler, which is a vertical and incline tube boiler with three drums above and one drum below. These drums are connected together by tubes, the fire being placed underneath the outer drum and first bank of tubes, the products of combustion passing up around the first bank of tubes over a fire brick baffle, down the second bank of tubes under a fire brick baffle and up around the back bank of tubes to the stack, as shown in Fig. 13.

The Sterling boiler was placed upon the market in 1890 in competition with the Babcock and Wilcox and Heine boilers, and has become very prominent owing to its simplicity and easy access to the interior of the boiler. To gain access to the interior of the boiler it is only necessary to remove the four man-

> hole plates on the end of the four drums. With the Babcock and Wilcox, Heine and similar boilers it is necessary to open up not only the manholes in the drum, but to remove the caps from the ends of each of the tubes.

There are a great many places where heat units escape from the boiler and settings without doing any useful work, and part of the fuel, unless very scien-





tifically handled, will escape in unburnt particles. This is shown by heavy smoke clouds issuing from the boiler stacks.

Taking fuel at about 14,000 B. T. U. per pound, only a small part of this fuel is obtainable in useful work. A part of each pound of fuel drops through the grates and is carted away with the ashes. As this fuel is not burnt its heating value is not given up, and the heat is thus thrown away. The loss may be roughly estimated at about 1 per cent, or 140 B. T. U.

Even where the furnace and boiler are enclosed in brick and the steam drum

and pipes protected by non-conducting covering there will be a certain amount of radiation, roughly estimated at about 5 per cent, or 700 B. T. U.

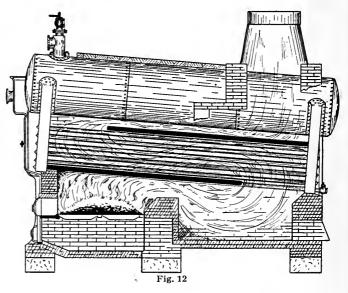
The two losses just mentioned, however, are small compared to the loss due to the escaping of the hot gases at the top of the chimney, which amount ordinarily to about 22 per cent of the heating value of the fuel, or 3080 B. T. U. Of the 3080 B. T. U. thus lost much is used in heating the air supplied to burn the fuel, the air en-

tering the ashpit at a temperature of, say, 60 degrees F., but the gases escaping at the top of the chimney have a temperature of 500 or 600 degrees F. This large increase of temperature requires heat, which is taken from that developed by the combustion of the fuel.

The chimney gases also contain steam, formed by the combustion of the hydrogen in the fuel as well as the vaporizing of the moisture in the fuel and in the air supply. A part of the 3080 B. T. U. is accounted

for by the escape of this steam. Further than this there may be unburnt carbon and hydrogen in the chimney gases. If all of the carbon is not burned to carbon dioxide (CO₂) and all of the hydrogen is not burned to steam, the escape of these unburnt combustibles represents loss of heat. The loss due to combustibles in the chimney gases accounts for the remainder of the 3080 B. T. U.

The three items of loss thus far considered total 3920 B. T. U., or 28 per cent, which represents the actual heat loss. The difference between this and 100 per cent



is 72 per cent, which represents the boiler efficiency; that is, the boiler puts into the steam 10080 B. T. U., or 72 per cent of the heat contained in the fuel. This efficiency is only obtainable when the sheets and tubes of the boiler are kept

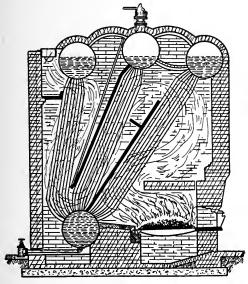


Fig. 13

in perfectly clean condition, meaning that the water side of the sheets and tubes should be kept free from scale and grease; that the fire side of the sheets and tubes should be kept clean and free from soot and ashes; that all air leaks in the boiler setting are stopped, and the draft properly regulated so that there is not an excess of cold air admitted to the furnace. In order to obtain an efficiency of 72 per cent it is also necessary that the boiler have competent supervision. The average small steam plant boiler operates below 50 per cent efficiency.

However, the greatest heat loss of the steam power plant occurs in the engine, auxiliaries and piping after the steam leaves the boiler. These heat losses in a good condensing engine plant are about as follows:

Main engine exhaust							
Main engine radiation	2	%	\mathbf{or}	280	В.	т. т	J.
Auxiliaries (when exhaust							
feed water heater is used)				210			
Piping	2	%	\mathbf{or}	280	в.	т. т	J.
	_						-
Total	62.5	5%	or	8750	в.	т. ц	J.

With the 28 per cent loss in the boiler, or 3920 B. T. U., and the 62.5 per cent loss in the power equipment, or 8750 B. T. U., there is a total heat loss of 90.5 per cent, or 12670 B. T. U., leaving 9.5 per cent, or 1330 B.T.U., turned into mechanical work. But not even all of this small amount is available for driving machinery, because the friction of the engine will amount to about 6 per cent of the 1330 B. T. U., or 79.8 B. T. U., leaving only 1250.2 B. T. U., or 8.93 per cent of the total original heat available for useful mechanical work.

Many non-condensing plants are using from two to three times the above amount, therefore their efficiency would be onehalf to one-third of the above.

An unusually important meeting of the San Francisco Electrical Development League was that held on September 4th at the Palace Hotel, when a large body of electrical representatives gathered to listen to addresses by Mr. A. E. Schwabacher, Federal Fuel Administrator for California, and Mr. H. G. Butler, Power Administrator of the California Railroad Commission for Northern and Central California.

The meeting was the first held after the vacation period and was presided over by Mr. John A. Britton, who introduced

the speakers of the day in his usual happy and able way. In his remarks Mr. Schwabacher showed very clearly the extreme necessity for fuel conservation in helping to carry on the war to a complete victory. Mr. Schwabacher's address was interesting in the extreme and gave his audience food for reflection. Mr. Butler spoke on the present power situation in Northern and Central California. He showed the need for curtailing all unnecessary lighting in order that the industries essential to the proper prosecution of the war may not be handicapped.

TO SEA

Our"PacificService"EmployeesAssociation



A meeting of unusually instructive value was that held in San Francisco on the evening of September 10th at Elks Hall, when Dr. F. F. Nalder, director of lectures, University of California, Extension Division, spoke on the subject, "Democracy vs. Kultur."

Dr. Nalder has had personal experience of the educational system in Germany, and the purpose of his address was to point out to his audience just where that educational system differed from those of America and the other allied countries, in order that a clear idea might be obtained of the German point of view, that point of view which so completely rules the minds of the German people that they stand as one man behind the military system of their country, even to endorsing its policy of ruthless barbarity.

"This war is a line-up of opposing forces behind opposing ideas," said Dr. Nalder. "Don't forget that each side is supporting a fixed idea or determination. Behind each lies the profound conviction of the justice of its cause; the Germans, on their side, possessing this to just as great a degree as the allies. It is purely a matter of education."

Dr. Nalder expressed fear lest the people of this country should underrate the man power of the enemy, should be led into a peace before the job of crushing German militarism is complete. It must be remembered that the central powers control some 140,000,000 people, of whom at least one-fourth are of military age, so that some 30,000,000 at least are available for some kind of military service. settle with a man power of this magnitude, said Dr. Nalder, will call for at least 5,000,000 fighting men from the United States alone, supported by no fewer than 150,000 aeroplanes and an adequate navy to protect transportation. The man power of the United States, therefore, must be thoroughly combed, not only for numbers but also for the right quality of material.

Dr. Nalder discussed the dominating influences over the German national system under three heads, namely, the educational institutions, the press and the legislature. He pointed out that the system of education in the United States affords facilities for education to the children of all the people without regard social stratification, in which it radically differs from that of Germany, where there are two types of school, one for the common or plain people and the other for the well-born. The one thing uppermost in the minds of the German rulers is to make the people satisfied with their lot in life.

As for the press, sufficient insight into that system has already been afforded the people of Europe by the articles appearing in the German newspapers both before and during the present war. Dr. Nalder quoted from a paper, "Young Germany," which described war as "beautiful and ennobling."

the legislature. Dr. Nalder warned his hearers of the folly of paying serious attention to published accounts of the doings in the Reichstag, which, he said, is a body of some three hundred and ninety legislators elected by a restricted popular vote and whose functions take more the part of a debating society than anything else. Behind the legislative system and in complete control of it lies the Bundesrath, the house of the German aristocracy, which not alone possesses all the power but whose deliberations are always held behind closed doors.

A good deal of this information came in the way of a revelation to many of Dr. Nalder's hearers. His address, in fact, was timely to a degree in that it served as a warning to the American people generally not to be deceived by newspaper headlines but to understand the German people as they are, not a political people wishing to be free, but a people possessing an almost mediaeval viewpoint

and entirely satisfied with conditions in

their own country.

The program of entertainment for this evening was furnished by the members of the St. Paul Dramatic Club under the direction of Mrs. Eva Smith Hackett. Mr. Lowell Redfield, as usual, led the assemblage in singing, and instilled a degree of enthusiasm into his hearers by teaching them the new song of "Liberty":

"God save our noble men,
Bring them safe home again,
God save our men!
Valiant and glorious,
Patient and chivalrous,
They are so dear to us,
God save our men!"

On the evening of September 3d the regular monthly transbay meeting of the Employees' Association was held at Ebell Club Hall Oakland, being well attended by employees and their families.

Sidney Coryn of the San Francisco Argonaut was the speaker of the evening, and the rapt attention of the audience was a notable tribute to Mr. Coryn's knowledge of the war situation and his ability to express this knowledge in a way which could readily be understood by all present. The fact that since the meeting was held a great many suggestions have been made by those present to have Mr. Coryn again address us at an early date indicates the unusual interest displayed by the audience in his talk.

displayed by the audience in his talk.

Mr. Coryn, it may be stated, has a son and daughter in the service in France, and as a prelude to his talk he read a most interesting letter from his daughter, who is in the canteen service. Mr. Coryn's son was recently wounded in action.

The entertainment provided was of an unusual character and those in attendance at the meeting expressed themselves as highly pleased with both the educational and entertainment features.

The girls of "Pacific Service" are preparing to entertain the sailors from the Naval Training Station on Goat Island at an informal dance on Thursday, October 3d. The dance will be held at Elks' Hall, and all arrangements are being made by Miss Estella Braesch of the Rate Department and Miss Lucy Keane of the Bookkeeping Department, from whom all necessary information may be obtained.

All the girls of "Pacific Service" are welcome and an enjoyable time is promised to all who attend.

News from Our "Pacific Service" Rifle Club

The past few months have been rather quiet ones for our "Pacific Service" Rifle Club. Many of our members are "over there," which makes it necessary for those at home to put in many extra licks trying to make up for the shortness of help. This, combined with the fact that many have been on vacations, has made it impossible to get more than a mere

handful on the range.

The vacation season, however, is now practically over, and the present indications are that we will have larger numbers from now on. All of our members should make a greater endeavor to attend the shoots, as the training may mean much to them under the present state of affairs. In addition to this, they should bring new members with them. Of the one and a half million or more of men now in France thousands had considerable preliminary training with the rifle through their respective rifle clubs. This has meant much to our Government in its further training of these men, and for this reason it is spending thousands of dollars for the promotion of rifle practice throughout the United States with both the .22 calibre and the service rifle. Whether one is liable for service or not he can help do his bit by becoming proficient with the rifle, thus fitting himself for the instruction of those who will have to go.

With the large number we have to draw from we should have a large and intensely active club, one eager to do its share in backing up the 540 boys from "Pacific Service" who are now giving their all

toward the big work.

The season of 1918 to date has produced the following qualifications: Two experts, four sharpshooters and five marksmen. This represents a very big percentage of the men attending the shoots. It is time to get busy so that we may have a long list of experts and sharpshooters to send in on January 1st as our report for the season of 1918. We will very likely hold a competitive shoot later on for some minor prizes, and those who have been plugging along faithfully will have a handicap over those who have been backsliding.

Tip up the end of the plank and start sliding in the other direction at once!

S. E. CARPENTER, Secretary "Pacific Service" Rifle Club.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

Latest news from the men of Fresno District who have enlisted in the service is contained in the following interesting

paragraphs:

William Zack Butterworth, who enlisted in the United States Navy, was sent to Yerba Buena Island and the last word we had from him was that he had made application for enlistment in the Naval Aviation Corps and was expecting to be accepted in that branch of the service.

Under date of June 1st, Owen J. Stearns writes from France: "Am getting along very nicely here and working in a large auto truck repair shop. We are doing great work over here and this is one of the experiences of my life that I would not have missed for many dollars." He is with Company 17, 4th Battalion, Air Service, 1st Regiment, M. M. Signal Corps, American Expeditionary Forces.

Frank W. Thunberg returned from New York and is now in an officers' class at

San Pedro.

Fred W. Newland was transferred from the United States Naval Reserve Station at San Pedro to New London, Connecticut, and assigned to the Second Battalion, United States Submarine Base. He writes that his work consists principally of repairing and maintaining special devised instruments for locating submarines.

Robert W. Downing, who enlisted in the Quartermaster Department, is now a first-class private in 132d Ordnance Depot Company,

Camp Fremont.

Walter E. Storm and Gus L. Thunberg enlisted at the same time in the Engineer Corps and, after spending a short time at Fort McDowell, they were sent to Camp Humphreys, Virginia, where they are now in training. Walter Storm is working hard and studying to become a non-com. He says, "It's no snap to get even a corporal's job."

Earl Patterson enlisted with the Engineers and was sent to Vancouver Barracks and from there to Camp Humphreys, Virginia. He has spent some strenuous time in training and is now helping to build a branch railroad line from Washington, D. C., to Camp Humphreys. He had hoped to see service in France at an early date, and writes that he is going to make a request that he be transferred to the infantry. To quote his own words, "I would rather fight than work."

Norman E. Maze is now at Camp Meigs, Washington, D. C., having enlisted in the Quartermaster Department. He has entered a non-com officers' school and is making good progress with his studies and no doubt will get his stripes.

J. P. Krog was sent to Los Angeles for special training in the Polytechnic High School at that point. This will cover a

period of three months.

Frank A. Alstrom, the last employee of this district to leave, was sent to Vancouver Barracks. He writes as follows: "I was assigned to a company a week ago and everything is fine. The company I am assigned to is composed of clerical men. Our cooks and the mess are considered the best in camp. The officers eat with us every chance they get. We have a piano and quartet for entertainment during mess, so we eat in cabaret style. Today for breakfast we had grapefruit,

ham and eggs, corn flakes, fried potatoes, bread and butter, coffee, and apple sauce. For dinner we had fried chicken, mashed potatoes, gravy, sliced tomatoes, celery, young onions, lemonade, chocolate pudding, and ice cream. 'Now if that isn't some feed for an army, I'm a liar." Al was no lightweight, as the following quotation from his letter shows: "I haven't had any uniform issued to me yet, but, say! don't laugh when I tell you the reason why. For the simple reason that they didn't have any large enough. It's a good joke, but just the same I get a tailor-made for that reason."



Lieutenant R. D. Likely, Aviation Corps, A. E. F. (Formerly of Redwood District.)

It never pays for a proud father to make rash promises to an ambitious son unless he is a good sport. Some months ago when James Nelson Mosher enlisted in the Navy, he told his father, H. N. Mosher, the genial superintendent of the Steam Department in Oakland, that if the war lasted long enough he expected to get an officer's job before he got back. H. N.'s prompt reply was, "Go to it, boy, and if you do I'll buy you your uniform." day or two ago came a telegram as follows: "Just arrived in New York. Have been promoted. Send money for uniform." H. N. was a good sport and wired the money within the next thirty minutes.

Nelson enlisted as a machinist's mate and is now rated as warrant machinist, which is next in rank to ensign.

Lieutenant William E. Fitzpatrick, formerly of the Commercial Department of the San Francisco District, writes under date of August 18th from somewhere in France, and desires to be remembered to all of his acquaintances in the company. He says that in his journey of 8,000 miles he has seen many interesting places and has had many interesting experience, but "there is no place like dear old San Francisco."

F. J. Southerland, our agent at Richmond, is now undergoing a course of intensive training at Fort Omaha, Nebraska. This is a course covering several weeks of military training, ground school training for the air service and followed by the usual training that comes to a flying cadet. Southerland vividly describes the course

in one word—"Work." He is more than pleased with his surroundings, his quarters and his "chow." He says that Fort Omaha is a small reservation compared to the San Francisco Presidio. It is crowded, however, with troops of the balloon companies.

Mr. Leach, manager of Alameda County District, is in receipt of a very interesting letter from H. E. Sandoval, formerly of the Electric Distribution Department. Our understanding is that Mr. Sandoval will soon enjoy the rank of ensign. Following is an excerpt from the letter:

"Our stay here in San Pedro is nearing an end now. The examination is over and the entire class passed with flying colors. Most of the class will go to Annapolis for further training, and it is a very pleasant thought, for I never associated with a nicer bunch of boys in my life. Wish you had them all with you in the good old P. G. & E. Co.

"Now that we are 'has-beens' one is given over to reminiscences. It is like graduating day at college. Many funny little incidents crop up in your mind. The course of study never was so hard as it was continuous. You had to plan every minute of the day or else night would find some things undone and a penalty attached. In addition to being embryo officers we are full-fledged wash women, scrub men, waiters and jacks of all trades. Some training. At the conclusion they gave us a furlough, and I enjoyed the beauties of Yosemite Valley. Should we go to Mare Island I am looking forward to a visit with you and may be so fortunate as to strike an employees' meeting."

Charles Dallerup, formerly superintendent of Marin District, has finished the course which he was taking at Fort Monroe, Va., ranking sixth in the class of 105 men. This does not surprise us, for we have noticed that our Pacific Service boys invariably rank among those who finish at the top.

Sergeant Dallerup writes to Charles J. Wilson of the Chief Engineer's office as follows:

"I have been assigned to the Enlisted

Specialists' School as an instructor in fire control. This covers telephone communication for gun fire and other applications of electricity in connection with the large guns. The work is very interesting and I like it very much. I stand no drills or formations, and the instructors have separate quarters by themselves, so I have a pretty easy job. The eats are good, and our barracks are close to a nice beach where the swimming is fine, so what more could a fellow want?

"Fort Monroe is a pretty large post, and is headquarters for the C. A. Corps. There is a large officers'



Sergeant F. E. Anderson, "C" Co., Eighth Field Artillery, Signal Corps, A. E. F.

school, and the Enlisted Specialists' Schools are also located here. At present there about 1,000 men in the variout branches attending the Enlisted Specialists.

"You sure realize that the country is at war when you look around here. It is a common occurrence to see from four to eight war airplanes in the air at one time. Also all the men are being trained on the new six-inch and eight-inch heavy artillery field pieces as well as the six-inch and eight-inch field mortars. It is a great sight to see the men going through these drills with gas masks on.

"I sincerely hope this letter finds you enjoying prosperity and good health. Kindly remember me to all my former associates, and tell anybody that may be

interested that I am doing fine."

Will T. Jones, member of the committee, received the following interesting letter from Lieutenant Hector Keesling, formerly powerhouse foreman at Electra and Halsey powerhouses. Mr. Jones has an individual roll of honor for his department, which is always kept up to date and which furnishes the addresses of all the boys in service. By this means the employees of that department are constantly reminded of their privileges and duties toward their former comrades. The scheme is recommended to any and all departments of the company. Lieutenant Keesling's letter follows:

"It has been some time since I received your letters as regards my membership in the Pacific Service Employees' Association, and as regards the 'Roll of Honor' which hangs at the eighth-floor entrance with the directory of those in Mr. Downing's department who are in the military service. The letters have proved very

interesting.

"Permit me to thank you as one of the committeemen of the Pacific Service Employees' Association for their action on my part. I am proud to be a member of the organization and sincerely regret that I did not join while with the gas company, but I think you understand why one is apt to be neglectful of such moves when he is domiciled back in the territory of the hydro-electric stations where trips to San Francisco are an event. I am also proud that my name appears on the Roll of Honor. After all, one's department is the best. I am sure of it in my case, for the reason that I am not very well ac-

quainted with the other departments, and, therefore, do not know of their good qualities, even if they do have them in excess of the hydro-electric section.

"I was agreeably surprised last Sunday, July 14th, to meet Lieutenant Williams at a military function in the line of a reception at the prefect of this section's headquarters. Had a rather strenuous day, taking it all and all. Inspection and review by some French general of the American and French troops.' I was fortunate enough to be one of the guests and had a good location near the reviewing stand. It was a wonderful and imposing sight which caused one to actually thrill The crowd was imwith patriotism. There is no mistake about the mense. way these French people can crowd, either. I got mixed up in a jam in Paris while trying to see where one of the Big Bertha shells hit. All I could see was the polished brass helmets of the firemen which stuck out of each window of the building, but couldn't come or couldn't go until the crowd started.

"To get back to the 14th again—at noon we gave a feed to some French officers and their wives and sisters at a very attractive spot down the river from here. Good eats and plenty of 'vin.' Then in the afternoon about 5 o'clock the aforesaid reception at the Prefect's.

"I am rather reluctant in stating that I have not been to the front yet. I have hopes. My present occupation is establishing radio schools at artillery brigades. Prior to this I have been in the Army schools gathering information in radio in Paris and elsewhere; also have been connected with an aviation center in connection with the radio work as used with aeroplanes. This was rather interesting. Only made one flight, due to the fact that joy rides were curbed on account of bad weather tying up the instruction so long that all the planes were in demand.

"My thoughts often turn back to the last job and the gas company. It seems a long time since I left Spaulding.

"I am about to write Mr. Jollyman telling him how I handled 50,000 ohms and never turned a hair!

"Give my regards to those whom I know on the floor and to Mr. George and Mr. Gentis if you see them.

"Hope this finds you well and prosperous.

"Je parle Français, but it is a long story."

"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF SEPTEMBER 15th, 1918 564 Total Number

BOARD OF DIRECTORS—SAN FRANCISCO Livermore, Capt. Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Jesse Wilhert
Canfield, Major George H.
Cass, Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dunne, Lieut. Edward A.
Dunton, Harold G.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.

RAL OFFICES—SAN FRAM
Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Geeil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester. Lieut. Frederick A.
Lewis, Fred Charles
Lindstrom, W. J.
McDonald, Hayward C.
Mel, Lieut. Washington B.
Mensing, M. J.
Morore, Lieut. Elmo Neil
Nordling, Wm.

Osborn, Lieut. Norris W. Parker Charles G. Osborn, Lett. North W.
Parker Charles G.
Regan, Arthur
Rossiter, Sidney Benjamin
Rubenstein, Frank Sam
Schuster, Lieut. John C.
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard H.
Sultan, Lieut. Walter D.
Terhell, Sergt. Jacques
Thomas, G. M.
Trudrung, Harry
Watson, John
Wilkins, R.
*Wilhelm, Clarence
Williams, Lieut. Leroy C.
Wright, Lieut. Ernest M.
nuary 23d, 1918.

*Died of pneumonia while on active duty in France, January 23d, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Harold M. Barr, John Milton Barrett. George Bates, Byron M. Belford, William Bennetts, Herman V. Bertelseci B. R. Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Gall, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cormack, Douglas Leslie
Currier, J.
Dueco, Daniel
Dupuoy, Max
Erickson, William
Ferguson, Allen E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D.
Hansen, Sergt. Hans J.

Henderson, John Thomas Hendricks, Normal Z. Hindman, J. E. Hoffman, E. J. Hughes, William C. Hunt, Lieut, Malcolm L. Hunt, Lieut. Malcolm L. Jacobs, Sergt. Edward Jenkins, Harry R. Jensen, Chas. Christian Jones, Sergt. Ivor Klinefelter, Sam Knopla, Charles Knott, Chas. E. Larson, Harry Larue, Chester Walton Longo, Michael Luce, Sergt. George L. Massoni, Dante McKenzie, Malcolm M. Mills, Leon A. Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, George A.
Oswald, James

Parsons, James Perkins, Erwin S. Pershing, Orton Lewis Pilcovich, Vincent Prefontaine, George J. Pilcovich, Vincent Prefontaine, George J. Price, Chalmers G. Proto, Charles Pullen, Corpl. R. A. Rowe, Sergt. John M. Sabel, Albert Sanborn, Wilfred M. Sandoval, Horace Earl Shuman, D. L. Silbett, J. E., Jr. Silvestro, Paul Skoglund, Elmer Smith, Stuart N. Stephens, Alden Raymond Thompson, Clark C. Wagner, Ralph Otto Walker, Harry C. Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B. Youngstrom, A. B.

CHICO DISTRICT

Curtis, Ray E.

COLGATE DISTRICT

Andrews, Crist C. Broyles, George R. Hale, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Dusenberry, H. H. Hinds, Perry Mare

Allen, Robert Grover Altpeter, Chas. E. Beaumont, Floyd Burton Boyd, William Thomas Compton, John A.

Hunt, Edward C. Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

CONTRA COSTA DISTRICT Knight, Lieut. Remi Chabot Matheron, Frank Mellerup, Fred H.

DE SABLA DISTRICT Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Truitt, James O.

Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W.

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James. Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Burkleo, Dan Butterworth, William Z. Devlin, John A., Jr. Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. I Coyne, J. J.

Gash, Lieut. Frank Taylor

Beloud, Leon C. Earl, George

Kent, James Cody

Bryggman, Emil W. Budalich, Oialy A. Caussou, Jean Casey, T. Chase, Corpl. H. A Clausen, J. J. Cullen, John P. Deloy, H.

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Busses, George D.

Beeler, Joseph J. Black, Marion Derr, Harvey

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt Harold S.
Francouer, Raymond J.

Collins, Geo. Washington Fitzgerald, Paul

DRUM DISTRICT

Johnson, Samuel T. Lohse, Lieut. Marcel P.

ELECTRA DISTRICT Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Gomes, Carl Howard, Frank P. Krog, Corpl. John P. Maze, Norman E. Nair, Harold Newland, Fred Walton

MARIN DISTRICT Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

Duane, Charles
De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Joseph Philip
Holdridge, H. Earl Holmgren, J. E.

Mayfield, James M.

NEVADA DISTRICT

REDWOOD DISTRICT

Snell, Verne C. Richards, James

PETALUMA DISTRICT

PLACER DISTRICT

Leary, Jerry

Beveridge, James

Fulton, Lieut. L. J. Haaker, Frank Haines, G. V. Harcourt, J. R. Hiestand, C. R. Hocking, Thomas J. Hoffman, Andrew P.

SACRAMENTO DISTRICT

Cameron, John Coyle, William Doyle Daigle, John M. Dick, Silas S. Dick, Silas S. France, Fred Rhodes Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan, Raymond M. Mathews, Maurice L.

SACRAMENTO SUPPLY DISTRICT

Dyer, John B. Jones, Verne H. Kinz, William J. SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J. BOOKKEEPING DEPARTMENT Gibney, Walter Haiden, Walter Inteman, R.

Jacobsen, Earl D. COLLECTION DEPARTMENT Oliver, Adrian Pierce Shea, Cornelius Thomas

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Patterson, A. Earl Stearns, O. J.: Stearns, Ray Storm, Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William

Snow, Wilbur Roland

MARYSVILLE DISTRICT

Hubbard, Sergt. H. W.
Johnson, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

NAPA DISTRICT Osborne, Lieut. Butler J.

Jennings, Edward J.
Johnson, Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Mengel, Henry

Newington, David O'Connor, Edward T. Olsen, Albert Raymond, Harold A. Richeson, Merle C. Riggles, R. F. Roach, Martin L.

Melby, John Miller, J. E. Mullen, Ira J

Taylor, Albert P. Taylor, Lieut. Cary P.

Fairchilds, John H.

Sutcliffe, Lieut. Harold T

Peers, G. A.
Raynard, Duncan
Sampson, L. E.
Sebben, J. E.
Sebben, J. E.
Smith, Corpl. R. F.
Strofeld, George
Uhlenberg, Louis H.

Ross, Chas. Archie Ross, Harold Lee Sanford, Walter W. Sartori, Adolph Sheehan, Parker J. Smith, Joseph Lee Smith, Myron M. Stiewer, Winlock W. Suggett, Archie Dean

Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Keating, Arthur Edward Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E.

Sheehan, Peter Burnett

SAN FRANCISCO DISTRICT-Concluded.

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E.

ELECTRICAL DEPARTMENT

Horsey, Lieut. Joseph H. Leary, James E.

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L. Allen, Fred H. Altland, Comer A. Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Lieut. Guy A.
Beatie, Gerald
Biehl, Lieut. P. F.
Boccignone, Dominico
Brady, George B.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F.
Clark, Lyle G.
Cook, Frank L.
Crompton, Walter James Cook, Frank L.
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold
Durand, Milton J.

Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice

Hanley, Leo J.

Eichbaum, Sergt. C. W., Jr. Estes, Sergt. Melville N. Fowler, E. H. Gardiner, Harold Anson Gaston, Corpl. J. B. Gerber, Harold Glasson, Corpl. Lester G. Grillin, John W. Hagar, Lieut. George H. Hart, Lieut. Grover C. Haugby, Corpl. Edward G.

Hart, Licut. Grover G.
Haugby, Corpl. Edward G.
Henion, Floyd
Hildebrand. Ernest
Hofacher, Fred
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S. Kennedy, Donald S. Madden, Joseph J.

Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robbins, Chas. W.
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F.
Shields, Garrison F. GAS DISTRIBUTION DEPARTMENT

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Alhert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Martin, William T.

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

GAS MANUFACTURING DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

RECORDS DEPARTMENT

Hughes, Percy Anthony

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

Siggins, N. J.

Southwood, Emerson C. Spandau, Lieut. R. D. Stohler, Adolph

Stonderg, Campi Sundberg, Emil Sweeney Michael Szczepanski, Edgar M. Thompson, Capt. A. R. Thompson, W. H. Thompson, Lieut, William

Thompson, Lieut, William Turner, John McBurney Valach, J. P. Vargas, Virgil H. Varney, Capt. K. Roberts Wagner, Hilmor A. Walker, R. J. Walsh, Thomas W. Winter, William J. Wolfe, Harold S. Wight Howard C.

Wright, Howard C.

McDonald, Wm. John

SAN FRANCISCO SUPPLY DISTRICT

SAN JOSE DISTRICT

Abercrombe, Corpl. Donald Andresen, Carl Clark, Richard Clark, William

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John

Lang, R. T. McNab, Hugh D. Merlinjones. Clarence Newman, Ray J.

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L. SAN JOAQUIN DISTRICT Riley, Norman Sidney Young, C. Cuyler McIsaac, Dan Olsen, Melvin L.

Faight, Forrest W. Flint, Sergt. Arthur P.

Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Caldwell Lieut Edward Caldwell, Lieut. Edward F. Candello, Lorenzo Carroll, Louis Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Danforth, E. A. Erbentraut, Edwin Otis Faulkner, Chas. C. Fiman, Edward F. Frederickson, J. C. Frier, George S. Hale, Lieut. C. St. John

Hunt, Lieut. Herbert Tevis Martin, Lieut. David G.

Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Jensen, Elmer D.
Johnson, Lieut. Carl B.
Kiely, Wm. P. Jr.
MacGregor, Owen L.
Maxwell, Merritte M.
McFarland, Julian
Menzel, Sergt. Robert J. Riesen, Alvin

Rowe, Sergt. Ernest W.
Roy, Harvey Leon
Singleton, Paul
Sprung, Sergt. Stanley W.
Stojanovich, Tony
Suess, Walter R.
Tarp, James P.
Terry, R. H.
Wright, Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix, Francis L.

Ross, Mervyn F.

SOLANO DISTRICT

Moore, George R.

Short, Ralph C.

Morgan, Mervin E.

VALLEJO DISTRICT Argabrite, Lieut. Walter M.

YOLO DISTRICT

Bischoff, O. E. Grandquist, K.

Boots, Benjamin

Howard, Everett J.

THE FOLLOWING EMPLOYEES HAVE ENLISTED BUT HAVE NOT AS YET BEEN CALLED TO THE COLORS

DISTRICT NAME Walker, Alec. MARYSVILLE

Over the Top (of the Net)

By S. E. CARPENTER.

ANOTHER year has rolled by and the eighth annual tournament of our "Pacific Service" Tennis Club is a thing of the past. A goodly number of our members are "over there" fighting real battles, and as some of their names appear on the three-win loving cup it has been deemed proper to set it aside until after the war. The Employees' Association, therefore, donated a one-time cup to be presented to the winner of this tournament. In addition to this the runner-up was to receive a War Savings Stamp and each of the semi-final winners \$2.50 in thrift stamps.

The first battle was fought in Oakland on our own courts. R. E. Fisher's racquet grenades were too much for S. E. Carpenter, who found the net a regular barbwire entanglement, holding back most of the little white pills that he sent hurtling back through space. One of the accompanying pictures shows Fisher in the

act of serving one of his death-dealing grenades. The remaining battles were fought on the enclosed arena of the California Tennis Club at Scott and Bush Streets, San Francisco, on August 24th and 25th. I. C. Steele and R. Kindig were the first to go into action. Steele was slightly off color and was given a hard battle. It appeared for a time that he might lose the first encounter, but good generalship finally pulled him out and carried him on to victory.

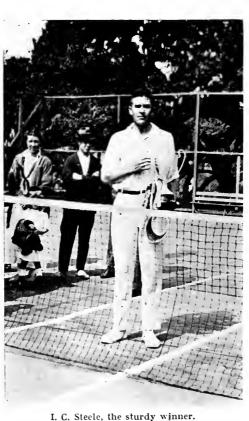
E. B. Henley and A. L. Trowbridge, the next combatants, had held a supposedly secret meeting and agreed to take life easy, fighting one round and then flipping a

coin to determine the winner of the next. The agreement was overheard by chance and the side line fans informed, so that the plot was foiled. The first encounter was hard fought and there might be a different story to relate if the loser had not been quite so handicapped by avoirdupois and a weak ankle. At the close of the first encounter the combatants were about to retire as per agreement, but pressure was brought to bear by the fans and the battle continued. Henley's wounded ankle kept weakening and finally necessitated calling the contest to a close.

The combat between W. G. Vincent and J. H. Parker proved to be quite short. Vincent, who is very well posted on valuating all sorts of things, seemed to know the value of each and every shot, and sent so many over the top tagged with Parker's name and address that a complete victory was soon attained.

The next hand-to-hand conflict occured between P.

M. Downing and S. J. Lisberger. Mr. Downing had it all doped out that it was clear sailing for him after glancing at the drawings. First of his opponents was Lisberger, who surely would think too much of his job to try manhandling his chief; then he picked out Dodge, Delaney and Steele as likely winners whom he should meet, and what was true regarding Lisberger was true of each and every one of these three. The first round was 6-0 in favor of Mr. Downing, so surely the dope was working. The contestants exchanged positions for the second round, and whether Lisberger forgot whom he



was fighting or thought he was actually over there doing his bit will never be known, but the result was 6-2 in his favor. This meant three-round battle, but it was easily seen that Downing did not intend to let his dope be upset. With good sportsman-like determination he went to the attack with a dash and when the wind had blown the smoke away was seen marching off the field a victor.

E. E. Dodge seemed to have a little more of his old-time snap and dash than he has had in the last several tournaments. He soon parried successfully all of

E. J. Beckett's thrusts and won an easy

K. I. Dazev seemed weighted down with many burdens as president of the Employees' Association and didn't show his usual speed, so was soon defeated by the furious (?) game of C. H. Delaney.

The preliminary rounds were all fought Saturday except the one between E. A. Weymouth and P. E. Chapman. At the last minute Mr. Weymouth was unable to appear, so defaulted. Sunday showed no

cessation of hostilities, as Chapman carried on the battle with Delaney. It proved to be a good hard contest, but Delaney again emerged victor.

The next conflict was number two on Mr. Downing's list, and before any one realized it he had a three-game lead piled up against Dodge. About this time Dodge happened to think of the real war over there, and figuring that he might have to go across with some of the rest of the old men decided now was the time to get in trim. The result was that the battle took on a different aspect, and whizz-bangs



The graceful Mr. Vincent.

Paul Downing doing his bit.

in rapid succession began falling on all sides of Mr. Downing so fast that he thought a barrage fire had been started. As a consequence the first stage of the encounter was soon over and the second proceeded with the same fury, requiring Mr. Downing to retreat from the scene of conflict.

Dodge followed up this victory with another over Delaney, but was surely some busy person chasing to and fro all over No Man's Land trying to locate the landing place of the high-angle fired shots of his adversary.

Steele, after his slump

of Saturday, was in fine form on Sunday, and after a short scrimmage with Vincent was in good trim for his battle with Dodge for final honors. This was surely a battle royal and exceeded all expecta-Both men were slashing and smashing with a vengeance, and every point was fought to a finish. It gave all indications of a three-round fray, as Dodge worked it up to point set in his favor. At this moment he served one of his awful Rogers, which compelled Steele

> to go entirely off the field to return it. This gave Dodge the whole court in which to send home the telling stroke. but instead he sent the missile sailing over the line. Dodge seemed to lose all grip of things from that on, and Steele, taking courage, made short work of this stage of the encounter. The next and final round, while hard fought, was Steele's all the way and the result was never in doubt. This closely contested battle was a very fitting close for another happy event in the life of our "Pacific Service" Tennis Club.

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

E present below preliminary income account statements, in condensed form, for the month of August, 1918, for the eight months ended August 31st, 1918, and for the twelve months ended August 31st, 1918, contrasted with the same periods of the preceding year.

PRELIMINARY INCOME ACCOUNT

Month of August

		1918	1917	Increase	DECREASE
Gross Operating Revenue	-	1,991,396.60 1,444,841.01	1,614,987.73 1,109,971.59	376,408.87 334,869.42	
Net Earnings from Operation	\$	546,555.59	\$ 505,016.14	\$ 41,539.45	
ADD Profits on Merchandise Sales and other Miscellaneous Income		32,632.75	47,214.66		\$ 14,581.91
Total Net Income	\$	579,188.34	\$ 552,230.80	\$ 26,957.54	
DEDUCTIONS: Bond and other Interest	\$	343,531.47 15,426.41 124,450.02	341,341.56 15,426.41 123,933.29	2,189.91 516.73	
Total Deductions		483,407.90 95,780.44	480,701.26 71,529.54	2,706.64 24,250.90	

EIGHT MONTHS ENDED AUGUST 31ST

	1918	1917	Increase	DECREASE
Gross Operating Revenue	\$14,536,534.72	\$12,980,395.78	\$1,556,138.94	
Expenses, including Taxes, Reserves for Depreciation, etc	9,709,666.04	8,183,192.67	1,526,473.37	
Net Earnings from Operation	\$ 4,826,868.68	\$ 4,797,203.11	\$ 29,665.57	
ADD Profits on Merchandise Sales and other Miscellaneous Income		352,688.95		\$ 31,492.94
Total Net Income	\$ 5,148,064.69	\$ 5,149,892.06		\$ 1,827.37
DEDUCTIONS: Bond and other Interest	123,411.28	123,344.87	66.41	
Total DeductionsBalance	\$ 3,867,302.69 \$ 1,280,762.00	\$ 3,833,462.30 \$ 1,316,429.76	\$ 33,840.39	\$ 35,667.76

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED AUGUST 31ST

	1918	1917	Increase	DECREASE
Gross Operating Revenue		\$ 19,367,683.58 11,919,055.08	, ,	
Net Earnings from Operation		\$7,448,628.50		\$ 460,272.70
Add Profits on Merchandise Sales and other Miscellaneous Income	476,854.21			77,555.26 \$ 537,827.96
DEDUCTIONS: Bond and other Interest	185,116.92 1,489,688.68		4,038.86 29,354.14	
Balance	\$1,660,927.80	\$2,383,749.94		\$ 722,822.14

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF AUGUST 31ST

August 31st	Gas Department	Electric Department	Water Department		
1907	113,948	49,813	5,502		169,263
1908	126,162	58,128	5,737		190,027
1909	133,579	65,967	6,334		205,880
1910	145,477	78,586	6,686		230,749
1911	159,136	93,994	7,206	23	260,359
1912	187,525	109,379	7,884	173	304,961
1913	201,359	124,755	8,352	245	334,711
1914	214,218	141,374	8,994	310	364,896
1915	225,712	160,310	9,522	358	395,902
1916	228,363	172,718	9,984	387	411,452
1917	237,675	187,358	$12,\!526$	425	437,984
1918	249,364	203,765	13,080	446	466,655
ain in 11 years	135,416	153,952	7,578	446	297,392

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month

> Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

SEPTEMBER, 1918

No. 4

EDITORIAL

In this day of economic upheaval there is one public utility that, beyond all others perhaps, appears to be suffering from the increase in everything that goes as an offset against income. That utility is the street railroad.

Not in California alone, but all over the United States, the public utility commissions are dealing with applications for increase in street railroad fares to help the various systems concerned out of the financial quagmire into which the unusual conditions existing have plunged them. In most instance, too, it is actually a proposition of meeting operating expenses, without saving anything on the subject of return upon investment. The result has been, so far, that the commissions generally have felt compelled to take the bull by the horns, as it were, and in many instances render decisions in the face of contractual inhibitions or restricmade in good faith between muncipalities and the street railroad companies operating upon their public thoroughfares.

Time was when the five-cent fare was considered enough and plenty to enable any responsible street railroad enterprise to pay operating expenses and fixed charges and have enough left over to pay dividends to its stockholders. In normal times, indeed, the public generally has regarded the street railroad as an altogether too lucrative undertaking to be deserving of any but lukewarm support in the way of franchises, permits, etc., which, as everyone knows, are the main props of the street railroad investment. But now, it seems, the purchase price of the nickel is not what it was by any means. Some of the revelations that have brought forth drastic measures on the part of the rate-making bodies of various States in the Union have been eyeopeners to the people of their respective communities.

A direct instance is afforded by the decision of the Pennsylvania Public Service Commission in the case of the Borough of Wilkinsburgh vs. the Pittsburgh Railways Company. In this the street railroad company applied for an increase over the regular five-cent fare in the face of the express terms of the franchise ordinance under which the company operated, and which it had freely accepted, limiting the fare to five cents. The commission recognized the validity of the conditions contained in the franchise ordinance but declared that all such contracts depended upon the continuing right of the people, through the legislature of their State, to exercise police power over public utilities. Then said the decision:

"The ability of the railroad company to make extensions and improvements is so dependent upon the return it is entitled to receive that the regulation of it must be placed in one body; and the legislature has designated the public service commission as that body. power of the commission to regulate rates will also result in eliminating discrepancies bound to exist where the rates are fixed by municipalities all served by one street railroad system." In other words, the decision held that it is within the power of the public service commission of a State, after making inquiry into the reasonableness of the street railroad's rates, to increase or lower those rates as the evidence justifies, notwithstanding that a specific limit to such rates was mentioned, and agreed to, in the municipal ordinance under which the street railroad company received its franchise to do business.

The same public service commission made a similar ruling in another case that concerned an interurban railroad company, deciding that the company had a right to increase its fare beyond the five-cent limit specified in the franchise to secure enough revenue for operation and maintenance purposes and to permit a fair return on the investment.

In California increases have already been granted to the Pacific Electric Railway Company, operating in the counties of Los Angeles, Orange, Riverside and San Bernardino, and to the San Francisco-Oakland Terminal Railways. In the first of these cases the evidence before the commission showed that the great street railroad system that is the pride of the southland had not been able to pay even operating expenses for some time past. There is now an application on file which concerns the passenger rates to be charged on the street railroad system of Sacramento, which, as most of our readers know, is owned and operated by "Pacific Service." This application is to be considered by the Railroad Commission of the State in the very near future.

The journals of the country generally have taken the matter up and through many of these the public has been apprised of the actual conditions which are confronting the public utilities today. As has been stated repeatedly in these columns, a campaign of education in such matters has been eminently necessary for reasons which need not be repeated over and over again; suffice it to say here that the public has not always had the case for the public utility presented to it in sufficiently convincing fashion to enable sound judgment to take the place of prejudice born of and fostered by misrepresentation on the part of political agitators. Stripping this situation as it stands today of unnecessary detail we get down to this one solid fact:

The purchasing power of the humble nickel which every passenger has been accustomed to hand to the conductor of the street car is the determining factor in the success or failure of the street railroad enterprise. There has been some competition through the jitney, but that is not now a matter for serious consideration. The actual decrease in the purchasing power of the nickel has resulted in putting the majority of street railroad enterprises in the country on the red-ink side of the ledger. Ergo, it follows that

something, be it one cent, two cents or more, must be added to that nickel, as occasion requires, to balance the account.

CALIFORNIA DECISION FAR-REACHING

[From Berkeley (Cal.) Courier]

The change of attitude of rate regulating bodies of various States toward public utilities, which has been noted with undisguised satisfaction in financial circles during the last few months, was brought out more clearly than ever before by order issued by the California Railroad Commission granting permission to three hydro-electric companies to increase their rates. The effect of the order was reflected immediately in the local investment market by a substantial advance in the common stock of the Pacific Gas and Electric Company, which will benefit to a greater extent in the matter of increased revenues than the other companies affected by the decision.

Millions of dollars of the stock of this company is owned by California citizens who are directly and vitally interested in measures which make it possible or impossible for their company to make

noney.

The day has arrived when any State seeking the development of its resources must show the investor that his property will be protected and allowed to make reasonable returns.

The California decision is of great importance as a precedent for other Western States to follow if they expect to secure their share of development in future.

A change in the directorate of the Pacific Gas and Electric Company is announced through the election of Mr. Nion R. Tucker to take the place of Captain Norman B. Livermore, resigned.

Captain Livermore was one of the first to volunteer for active service after the United States entered the war. He is now serving as a captain of engineers on the French front. At the time of his departure he left his resignation in the hands of President Frank G. Drum, and at a recent meeting of the board of directors the resignation was formally accepted. Mr. Tucker, who succeeds him, is prominently identified with the business community in San Francisco and represents large stockholding interests in "Pacific Service."

Tidings From Territorial Districts

Alameda County District

The typical district agent of a gas or electric company is a genial fellow who knows everybody and everybody knows him. Demands are upon him day and night for any occasion, company business, civic, or otherwise, generally otherwise. The following narrative is modestly told:

The happenings of yesterday were so fast, furious and exceptional that I believe they are worthy of record in our

great family scrapbook.

At 4:45 a. m. the town nightwatch, Jones, roused me out of sweet slumbers and informed me that there was a big fire in an adjoining town and that our

wires were in danger.

I immediately got up. First of all, I started to warm up some stale coffee, and while same was getting hot got my clothes on, which consisted mainly of a new pair of pants which I had worn to a society affair the night before, and which consequently were mighty handy.

Then I got my coffee, the night watchman joining me, and inside of ten minutes was caressing "Lizzie" in my garage. I want to say right here that for a year now Liz gets awfully "ornery" when disturbed real early, and I found this same state of affairs at this most critical time.

About six months ago I invested in three feet of small rubber hose and two priming spark plugs, and when my little squirt can gets empty I suck gas from the tank and fill the can. Of course the can had to be empty this particular morning. I sucked, and accidentally swallowed, and found that stale coffee and gas do not harmonize. Getting rid of both ingredients, after twenty minutes' delay, we hit the trail and never gave Motorcop Pete even a small thought.

Arriving at the fire I found that our nearest wire was over 600 feet and the wires that were supposed to be fully charged with high voltage were telephone. Keeping this knowledge to myself, like heroic Pershing, I climbed the pole, amidst a dense silence from the fire lads, including every man, woman and child of the entire city, and vigorously shouted "All clear."

I believe my quick actions saved a house next door to the barn from burning up; anyway I was given the credit.

At 6:30 the homeward run was commenced and on the trail Jones reminded me that dove hunting was open. He knew where there was a gun and several years ago he saw a couple of doves there. So being a regular feller I said O. K., and by 7 we were looking for the doves he once upon a time saw. Somebody once told me dove stew was good, so I was willing to take a chance. Unfortunately we did not see any birds, but we did see a real corn field and as we had to go through, without thinking, began to gather a few ears, and in our hurry to get away I left part of my fine clothes on the barbed wire fence.

We finally got back to town, and were held up by the town marshal, who informed us that we were needed to assist in a raid on a Mexican settlement, where just previously a man had tried to insert a butcher knife into another man. The raid was very successful, and seven men and an Indian squaw are now in the town iail.

I finally got back to the bosom of my family, got a small breakfast and a large wash and arrived at my desk at 9:30 A. M., and on account of what I have been through I hardly think the district manager will dock my pay for being late.

A. N. OTHER.

The National Ice Cream Company, Third and Cypress Streets, has installed a ten-horsepower Kane gas-steam boiler and one No. 8 Hoffman automatic water-heater. A double copper coil is connected to the top of the boiler in the vent for heating the feed water with the stack heat. The cans and containers are washed with hot water and then sterilized with live dry steam. The gas consumption on the boiler is about 600 cubic feet per hour, and with the automatic controller it requires very little attention.

The Baker Baking Company, Inc., Fifteenth and Broadway, has opened another modern sanitary bakery, where wholesome, clean, warm bread can be had any time during the day. The bread is made up and bakes in open view, being handled by machinery. Two motor-driven reel ovens (Barker type) bake 200 loaves of bread every forty-five minutes. Gas fuel is used to heat the ovens and gas furnishes heat to the proof boxes for raising the bread. This method of baking has proven very satisfactory.

A. U. Brandt was born and raised in Missouri, famed for its mules. He says the donkey is like many people. You can call them by their names as much as you want to and it doesn't hurt them a bit.

Henry's Cafe is opened as a modern Oriental Chinese restaurant, owned by Mr. Lim Bin, 410 Fifteenth Street. A special furnace was built to fit five chop suey kettles. The heat is applied with five two-ring industrial burners fitted with pilot lights. There is a one-section restaurant range, steam table and water heater, making an all-gas kitchen.

IN MEMORIAM

A. G. MITCHLER.

We regret to announce that Mr. A. G. Mitchler passed away suddenly September 4th, 1918. He entered the company's employ February 5th, 1896, serving in various capacities in the Alameda Branch Office, including its management. November 24th, 1916, he was transferred to Oakland Main Office as cashier, succeeding the late Mr. W. D. Smith.

He was an untiring worker, an exceptionally rapid accountant, and accurate in detail. He was a native of this State. He was a great lover of nature, and, characteristic of such, he was kind and liberal. He leaves a wife, Mrs. Florence Gardner Mitchler, who has a host of friends in "Pacific Service" and to whom sincere sympathy is extended. His coworkers have lost a good and true friend and the company a faithful and valued employee.

Sacramento District

The State Fair directors are more than pleased with the success of the Fair this year. The gate receipts were less than \$8000 short of the mark set in 1917, which was a banner year for Fair attendance.

The most popular attraction was furnished by the aviators from Mather Field.

Every day for an hour or more some of the expert flyers would give a demonstration, and at times there would be a number of planes in the air at one time furnishing some thrill for the waiting crowd. The live stock exhibit was by far the best that has ever been shown. The visitors seemed to have come to study and to learn, as was evidenced by the interest taken in exhibits that were of an educational nature.

The Fair this year could rightfully be termed "The War Fair," for, with the aviators, drills by the marines and concerts by the Mare Island Naval Band, one was continually reminded of the war. The boys from the Aviation School located near Sacramento were admitted

to the ground free of charge.

Tuesday, September 3d, was Japanese Day, and the management furnished a number of very novel features, including exhibitions of jiu-jitsu by Japanese experts, Japanese fencing, singing by school children, also singing by a Japanese grand opera singer, as well as music by a Japanese band. The Japanese Consul of San Francisco was in attendance and gave a very interesting talk during the dedicatory exercises for the Japanese exhibit. On Thursday, Governor and Sacramento Day, the attendance was estimated at about 30,000.

On Saturday, September 7th, the California Masons gathered to lay the corner stone of their new temple. The Most Worshipful Grand Master William Rhoades Hervey of Los Angeles officiated. The parade was formed at the old building at Sixth and K Streets and was headed by the Islam Band and followed by all the Masonic bodies of Sacramento and visiting Shriners from San Francisco. The procession proceeded to Twelfth and J Streets, the location of the new building, where, in the presence of hundreds of spectators, the corner stone of the new Masonic Temple was laid with impressive ceremonies.

The members of the various Masonic organizations, the Islam Band, the Zouave Patrol, the Commandery Band and a squad of soldiers from Mather Field stood in splendid array in front of the temple. The completion of the new temple has been very much delayed on account of scarcity of labor and material.

Saturday, September 14th, our genial cashier, R. F. Robinson, was married to

Miss Alma Eckhardt, who has resided in Sacramento with her parents for a num-

ber of years.

It is needless to say that the good wishes of the entire Pacific Gas and Electric organization go with this happy pair. Mr. Robinson has been connected with the company for a period of twelve years, first in Fresno District and latterly in the Sacramento District. We sincerely wish him and his bride all possible happiness.

Another interesting event of recent date was the marriage of Mrs. Stella Knox and J. Orien Tobey, which took place in San Francisco on September 16th. Mrs. Tobey has many friends among the members of "Pacific Service," while "J. O." is the popular superintendent of the Electric Department in the Sacramento District.

Department in the Sacramento District.
Mr. and Mrs. Tobey are motoring through the southern counties, and upon their return will make their home at 1217 Fifteenth Street. "Pacific Service" extends congratulations and best wishes to the happy couple.

the happy couple.

C. W. McKillip.

Cupid on a Rampage

Dan Cupid's on a rampage, Gol dern his little hide! He's tearing through our office On a wild and joyous ride.

The men seem gassed and gun-shocked And the girls are all aquiver, When Danny dashes by them In his heart-disrupting flivver.

Each time he twangs his bow-string An arrow finds its mark; He wings them in the daylight, And he wings them in the dark.

Quoth he, "I've got them going, They can't get gay with Danny; For I'm the lad who always gets Their sentimental nanny."

Not long ago—I'm not just sure, But think it was in May— While trying out some fancy shots He hit Cecile Chauvet.

Cecile behaved with quiet mien,
And Cupid thought he'd missed her,
So he turned around and drove right
down

And shot her little sister.

"But the job that I am proudest of,"
Young Danny said to me,

"Is the way I knocked old R. F. R. From his tall and lonesome tree.

"I've tried—well, I refuse to say
How long I've lain in wait
To make one good straight center shot
And get that bird a mate.

"For it takes some careful shooting
And you need your sharpest dart
To even break the membrane
Of a cashier's stony heart.

"The next one that I hunted down
Was scared almost to death;
He flattered, begged and threatened me
Till he was out of breath.

"'Lay offa me,' said J. O. T.,
'Your shooting outta season;
Come, kid, be good, I wish you would,
For, honest, there's a reason.

"'Perhaps you've seen my limousine, Now, boy, those things cost money; So put away those darts today, You pesky little rummy.'

"'Nix, nix on that, you plutocrat,'
Said I, and then I pinged him.

And now like all the others
He's happy that I winged him."
H. R. WILBUR.

Marysville District

That the future of the vegetable-drying plant located at Wheatland is assured is indicated by the fact that the E. Clemens Horst Company is now entering into contracts with vegetable growers to lease the entire ranch of fine bottom land, consisting of close to 10,000 acres, located here. As an additional indication of the future of the industry the company is now preparing to install an immense cold storage plant at Horstville for next season so as to properly handle the vegetables received for drying. This plant will be of sufficient size to care for the large quantities that will be received during the season.

Just to show how peaches grow in Sutter County, Fred Hauss brought a twelve-inch branch in from the ranch of Frank Souza. There were thirteen peaches of two and one-half inches in diameter on that branch. The fruit from Souza's ranch was bought for the Pacific Coast Canning Company at \$60 per ton, which means \$12,000 for Mr. Souza off a ten-acre ranch. There will not be any call for aid from the Sutter County fruit

growers this year, as each of them is making more than a bank president. The only way they speak of peaches is in carload or train lots.

It might be well to add that "Pacific Service" has done its "bit" in Sutter County, since every orchard has an electrically operated pump.

IN MEMORIAM

Mrs. Thomas Clemo, wife of Thomas Clemo and mother of Miss Alice Clemo, passed away in Oakland. She had been ill for several months and had been in Oakland but two weeks when the end came. Her husband, daughter and her mother, Mrs. Virginia Fisher, were at her bedside when the end came. Mrs. Clemo's death will be mourned by her many warm personal friends. She was prominent in lodge circles, especially in the Rebekahs and the W. R. C.

She was born in Forbestown and was forty-two years of age on her last birthday, May 18th, of this year. She had been married twenty-one years since January last.

Mr. Clemo is a member of "Pacific Service," having been in charge of the Oroville gas plant for a number of years.

Capitalists representing the Westinghouse Electric Company are now operating the chrome deposit recently discovered by J. A. Clark near the Intake on the Western Pacific. At the present time the mine is being operated under a lease. The present operations are confined to exploration to discover the extent of the deposit and the percentage of chrome that the ore carries. The present indications are that the deposit is even larger than was at first thought, and that it is the largest deposit of chrome in the State. It is planned to erect a concentrator upon the property.

The Rosenberg rice mill at Gridley is now running twenty-four hours a day, making flour from rice imported from The local supply was disposed of long since. The mill is being overhauled preparatory for next season. The flour-making department is but a small section of the mill, and is operated by electric motors.

Vincent P. Dole of Chicago, one of the largest olive brokers in the United States, has visited Oroville recently. Mr. Dole states that Eastern people are beginning to recognize the superiority of the ripe olive. He praises Oroville for the work she is doing in the agricultural line and is quoted as saying that "In the East and among all olive dealers Oroville stands out as a Western town which can be relied upon to ship olives of good quality."

The Swayne Lumber Company of Oroville has commenced cutting pine timber up the Feather River Canyon for the use of aeroplanes. The Swayne people received word some time ago that they were to be asked by the Government to supply a large quantity of this material.

There is now a large force of men working in the woods and two large saws are running at the plant. It is required that all lumber that is to be used for aeroplanes shall be kiln-dried. The Swayne Lumber Company is the only concern that uses this method for drying lumber in this section, so it is probable that a large amount of material will be sent from other sections to the Swayne people for drying.

The Colusa Mills have started in their new crop run, Mr. Weckbaugh having just returned from a trip to Sacramento, San Francisco and other points where he booked some large orders of both wheat flour and barley flour. Last year the mill had a very active business of both these staples, and they are now reaping the benefit of the ground they covered.

Any night we can see the lights of the mill burning all night, which is a familiar and welcome sight for the local industry. E. C. Johnson.

Vallejo District

Vallejo is surely getting on the map; there is activity everywhere. Buildings of every description are going up as fast as material and available men can put them up, and contractors are all short of help.

The Government has started the new city at the foot of Tennessee Street, and hundreds of men and teams, working like bees, are making things hum. Carpenters are putting up the houses as fast as the

land is leveled.

The Department of Labor announces that permanent dormitories will be built to accommodate 1000 men; also thirty small apartment houses of four apartments each; about 100 story-and-a-half frame houses, containing four, five and six rooms each, and a mess hall. Con-

tracts have already been let.

Next comes the big causeway which will connect Mare Island with Vallejo and which will be the most up-to-date structure of its kind in the West. The bridge will be eighty feet in width, and in addition to the railroad tracks there will be a driveway for autos and other vehicles and a walk for foot passengers. Contracts have been sent to Washington for approval.

The greatest patriotic parade ever held in Vallejo was witnessed the evening of September 3d to celebrate the world's record in the building of the destroyer Ward.

There is great activity at the new Sperry flour mills, the employees working exceptionally long hours, from 7 a.m. until 9:30 in the evening.

Vallejo has suffered this year on account of the scarcity of water, cards having been sent to all water consumers to conserve as much as possible, limiting them to fifteen gallons per person per month.

IN MEMORIAM

It is with the greatest regret that we have to record in these pages the death of Mrs. A. J. Stephens, wife of our district manager at Vallejo, who was taken ill while on a vacation with her husband and two little boys and passed away on August 27th, after an illness of only two weeks.

Mrs. Stephens spent the greater part of her life in Vallejo and occupied a prominent place in the affairs of that city. She was greatly beloved by all whose privilege it was to know her, and her untimely death came as a severe shock and a great loss to her wide circle of friends.

To the bereaved husband in this hour of sadness we extend our sincere sympathy. The thoughts of all the members of "Pacific Service" are with him, and we hope that this knowledge will help a little to lighten the sorrowful days.

Yolo District

Yolo County goes "over the top" again in winning the first prize at the California State Fair at Sacramento for the best general exhibit and for the best agricultural exhibit.

Much credit is due Fred Shaffer, secretary of the Yolo County Board of Trade, for the success of the county display this year, as well as last, when first prizes were secured.

The allotment for Yolo County for the September Liberty Bond subscription is about one and a half millions: The per capita subscription will probably be higher than any other county in the United States, or close to \$1000 for each man, woman and child in the county. The average for the Nation will be about \$60 per person. The great difference in the per capita allotment is due to the fact that Yolo County has the reputation of having greater bank deposits for its population than any other county in the United States.

J. W. Coons.

Head Offices, San Francisco

A notable addition to our "Pacific Service" Roll of Honor is Leon B. Jones, assistant chief engineer of the Gas Department, who has enlisted as a private of engineers in the United States Army.

Leon B. Jones is the second son of E. C. Jones, the company's chief engineer of the Gas Department, and inherited a love of the gas business from three generations of ancestors extending back to the beginning of the industry. His connection with our company dates from the busy days following the disaster of April, 1906, when he left the California School of Mechanical Arts. He has done some brilliant work during his twelve years of service, having been the originator of oxy-acetylene welding of steel gas mains. This process was described in a paper read before the Pacific Coast Gas Association in September, 1912, and credit for original development work in oxyacetylene welding was given Mr. Jones by the Panama-Pacific International Exposition in the award of a diploma and gold medal.

During the last six years he has devoted himself to the improvement of the process of manufacturing oil gas. In collaboration with his father he developed the newest process and apparatus for the manufacture of gas from crude oil, which is patented in the names of E. C. and L. B. Jones and has contributed so much

to the success of the Gas Department of "Pacific Service." Much of this work was described in a paper read in September, 1913, before the Pacific Coast Gas Association, for which Mr. Jones was awarded the gold medal of the Association.

Mr. Jones is a member of the Pacific Coast Gas Association, the American Gas



Leon B. Jones.

Institute and the American Association for the Advancement of Science, is a junior member of the American Society of Mechanical Engineers and a director of the Pacific Coast Gas Association.

He has devoted much time and thought recently to the extraction of toluol from manufactured gas, and has been active in assisting the gas defense service of the United States Army. In this branch of the national service he has had opportunity to receive an officer's commission, but he felt that the place for redblooded American boys was at the front and the proper way to get there was to start as a private soldier, although his work for the Pacific Gas and Electric Company was such as made him all but indispensable, practically exempting him He is only military service. twenty-eight years old, and so was not entitled to take the recent examination for engineer officers.

In enlisting in the Army of the United States, he leaves behind a charming wife and a little son, born on "Pacific Service" Day, March 15th, 1915. He is now assigned to the First Replacement Engineers, Company C, Washington Barracks,

D. C., and will probably soon be placed in an engineer officers' training school.

Still another name was added to the roll on September 10th when B. J. Crowley was inducted into the service of the United States Army. Mr. Crowley was employed in the capacity of secretary to Vice-President Hockenbeamer, and also acted as chairman of the entertainment committee of the Employees' Association. His genial personality made him a host of friends both in and outside of the company. This latest induction furnishes no new experience for him, as he went to Camp Lewis about a year ago, but was disqualified for active military service and returned to San Francisco. Uncle Sam, however, evidently recognized that Crowley was too good a man to be running around loose, and he is now serving his country by assisting on Local Exemption Board No. 10.

We are glad that he is stationed in San Francisco, so that we shall still be able

to see him occasionally.

John P. Coghlan, attorney and manager of our Claims Department, who surrendered the active management of the Northern Electric Railway system as receiver of the Federal Court on July 1st, has just declined an offer from the Department of the Interior to take the management of the Government railway in Alaska.

The Government railway at present extends from Anchorage and Seward on the coast to the Matanuska coal fields; an extension now under construction will reach Fairbanks on the Tanana River, a branch of the Yukon, within the next two years. When completed the railway will have over 500 miles of track and will have cost approximately \$30,000,000. It will open a territory equal in area to Norway and Sweden and richer in natural products than those countries and Finland and Denmark combined.

The railway is being built under the direction of William C. Edes, a well known California engineer, and was managed until lately by Thomas Riggs, Jr., who has just been appointed Governor of Alaska. It was the position held by Governor Riggs that was offered to Mr. Coghlan.

The offer made to Mr. Coghlan no doubt followed his successful operation and management of the Northern Electric system. It was highly flattering to him

and was declined only because he prefers to remain with "Pacific Service" and to make his career and home in California.

On Friday evening, August 30, a farewell "get-together" party was held at the home of Mrs. Adele Morton for Miss Letitia A. Curtis of the Electrical Construction Department, who is the first woman in "Pacific Service" to be called for duty overseas with the American Red Cross.

The evening was pleasantly spent in music, talk and games, and the whole motif of the evening was the Red Cross. The dining room was daintily decorated with festoons of small red crosses and the repast table carried out the scheme. From the picture of the assembled group you can readily see that they had a merry and enjoyable time despite the shadow of the nearing separation.

Miss Curtis left on Saturday, September 6, for New York, where she is to take passage for France. Her destination, as far as she knew then, was to be Paris.

She has long been associated with our company's activities and carries with her the best wishes of all for her success.

During the supper party Miss Curtis

was presented with a gift from the girls named and the following testimonial:

"We salute you, the first woman of 'Pacific Service,' to volunteer for foreign duty.

"We laud your patriotism in breaking the warm ties of home and friends to answer the call of duty overseas with its cold certainty of labor, trials and sacrifice.

"We believe the unusual experience and the broad opportunity for personal development of character will far more than repay you for the many hardships you will have to endure, but the feeling of duty well done will be your greatest reward.

"We wish you Godspeed. Our good thoughts go with you."

Blanche Sonneborn
Billie Willing
Bertie Dale
Clara Cosgrove
Freda Riesinger
Lulu Schlichenmaier
Loretta Vander White
Mrs. Emma Thierbach
Miss E. Heinrickson
Mrs. Alice Hamilton
Mrs. Teresa Sheridan

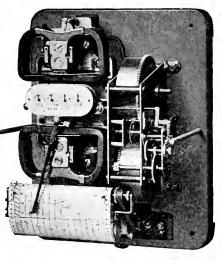
Mrs. Hazel Boone Mrs. Holton Mary Donnelly Mrs. Sadie Wales Mrs. Adele Morton Mrs. Sara Martin May Murphy Ruth Shea Rosa Lamont Sadie Curtis Zita O'Connor



Miss Letitia Curtis surrounded by a group of her associates of "Pacific Service" who are assembled to wish her Godspeed.







Westinghouse

Type RA Recording-Demand Watthour Meter

Accurate

Reliable

A Self-contained demand meter that gives a graphic record of the integrated block interval demand, with its amount and time occurrence, directly on a chart, and, in addition, a regular kilowatt-hour dial giving the integrated power.

Type RA Recording-Demand Watthour
Meter includes a Westinghouse Type OA Polyphase Watthour Meter element, to the gear
train of which a recording pen is attached,
making a graphic record on a roll of paper
driven intermittently every interval
by a high-grade handwound clock.

Catalogue Supplement 3-A1 gives full information;
I send for a copy.

F

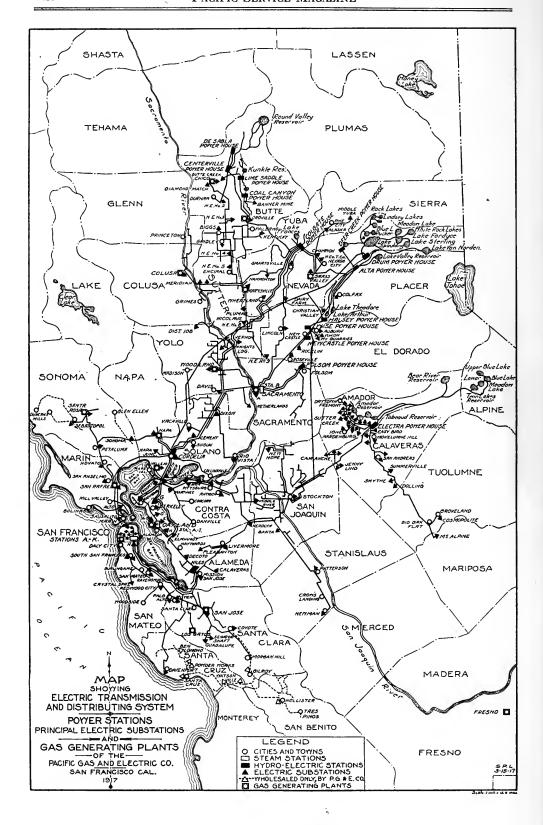
(

F



Westinghouse Electric and Manufacturing Co.

EAST PITTSBURGH, PA.
San Francisco Office, 1 Montgomery Street



Pacific Gas and Electric Company Furnishes

"PACIFIC SERVICE"

TO OVER 460,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

DIRECTLY

POPULATION

No.

ing...... Larkspur....

*Larkspur
- *Clincoln
Live Oak
*Livermore
- *Lomita Park
- *Loos Gatos
- Madison
- *Mare Island
- Martinez
- *Marysville
- Mayfield
- *Menlo Park
- Meridian
- *Millbrae
- Mills
- Mills
- Mills
- Mills
- Mills
- *Mills
- Mills
- *Mills
-

INDIRECTLY

POPULATION

No.

Pinole
Pittsburg
Pleasanton
Port Costa
Redwood City
Stehmond
Rio Vista
Rocklin
Podeo

FROGENIA FROGEO.... F-6Roseville.... Ross

Rosseville
Ross
Sacramento
San Andreas.
San Annelmo
San Bruno
San Francisco.
San Jose.
San Juan
San Leandro.
San Lorenzo.
San Lorenzo.

TOTAL

POPULATION

No.

Electricity		128	1,210,830	48	132,825	176	1,343,655
Gas			1,219,690		8,600	53	1,228,292
Water (Domestic)			57,302		19,300	19	76,600
					19,300	1 1	76,000
Railway		1	76,000		<i></i>	l1 _ l	76,000
		Commence and the second	ouvie cr	DUDD DV COM	D 4 3/37		
				RVED BY COM			
	pulation		pulation		opulation	Place	Population
¹ Alameda	30,000	El Verano	400	MokelumneHil		2San Quen	
Albany	2,300	² Emeryville	3,000	Morgan Hill	750	San Rafae	
Alvarado	700	Esparto	250	Mountain View		Santa Cla	ra 6,000
Alviso	550	Fairfax	250	Mt. Eden		Santa Cru	
6-6Amador City	1,100	Fairfield	1,000	² Napa	6,500	² Santa Ros	
Angel Island	280	Fair Oaks	300	3-6Nevada City	2,900	Saratoga.	300
Antioch	2,000	Felton	300	Newark		Sausalito.	
*Aptos	300	Folsom	2,000	Newcastle		² Sebastopo	1 1,950
Atherton	250	Forestville	225	Newman		⁶ Shellville.	
6-2Auburn	2,800	¹ Fresno	48,867	Niles		Sheridan.	
² Barber	500	Gilroy	2,900	Novato	400	Smartsvill	
² Belmont	375	Glen Ellen	900	² Oakland	225,000	Soquel	400
Belvedere	550	3-6Grass Valley	5,200	Oakley	200	Sonoma	1,290
Benicia	2,400	Gridley	1,800	*Occidental		2South	
⁶ Ben Lomond	800	Grimes	350	*Oroville		Francis	co 3,750
² Berkeley	65,000	Groveland	250	Pacheco		²-¹Stanford	Uni-
⁶ Biggs	500	Guerneville	780	² - ⁷ Palo Alto		versity.	2,600
Bolinas	200	Hammonton	500	Paradise		5-6Stockton.	42,000
Broderick	600	² Hayward	4,000	Patterson		Suisun	800
² Burlingame	4,000	² Hillsborough	950	Penn Grove	. 300	Sunol	340
Campbell	700	⁶ Hollister	2,500	⁴ Penryn		Sunnyvale	
Capitola	275	6_6Ione	1,000	Perkins	. 250	Sutter Cit	y 250
Cement	1,000	Irvington	800	² Petaluma		2-6Sutter Cre	eek 1,300
Centerville	850	6-6 Jackson	2,100	² Piedmont		Tiburon.	
² Chico	15,000	² Kentfield	500	Pike City		⁶ Tres Pino	s 300
*Colfax	500	⁶ Kenwood	200	Pinole	1,800	Vacaville.	1,250
2Colmo	1 900	L'nighte Lond		Ditteburg	6,000	2 fWalleio	

3,000 250 500 3,500 6,000 1,100

1,000 850 15,000 1,800 2,000 350 2,000 350 200 3,000 3,000 3,000 1,700 3,000 1,200 225 5,500 1,200 2,000 3,0 Davenport.
Davis.
Decoto.
Dixon.
Drytown.
Duncan's Mills
Durham.
-Eldridge.
-Eldridge.
-El Cerrito.
Elmira Elmira... Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

²Chico. ²Colfax... ²Colma... ²Colusa... Concord...

Davenport....

Cordelia Corte Madera. 2-6Cotati..... Coyote.... Crockett.... Crow's Landing 2Daly City.... Danville...

> 3,200 350 500 EGas, Electricity and Water. Gas, Elect. and St. Railways. Electricity and Water.

San Martin... San Mateo... San Pablo.... Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

Fires Pinos
Vacaville

2-sVallejo

Vineburg

Walnut Creek

Warm Springs

Watsonville

When Springs

Woodside

Woodside

Volo

'Yuba City

Add Suburban

Total Cities and Towns..1,422,522

Total Popula-tion Served...1,823,108

Population.. 400,586

15,500

1,800 6,000 1,500 1,000 4,200 16,500 1,000 900 300 4,200 76,000

76,000 750 3,000 1,500

550 5,000

6,000 500

400 200

580,000

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	65
Number of Gas Consumers249,3	
Number of Water Consumers	80
Number of Steam Consumers 4	46
Total number of consumers	55

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

VERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business. is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

Albany, N. Y. Ten Eyck Building Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORE, MD.
Munsey Building
Boston, Mass.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO, LLL. CHICAGO, ILL.

137 So. La Salle Street
CINCINNATI, OHIO
FOURTH Natl. Bank Bldg.
CLEVELAND, OHIO
Guardian Building
Guardian Building
Guardian Building
FACE STATE S

DAYTON, OHIO Mutual Home Bldg. DENVER, COLO.
First National Bank Bldg. New Orleans, La.
301 Baronne Street DETROIT, MICH.
147 Griswold St.
HARTFORD, CONN.
Conn. Mutual Bldg. Conn. Mutual Bidg.
INDIANAPOLIS, IND.
Fletcher Sav. & Trust Bdg.
Fletcher Sav. & Trust Bdg.
Fletcher Sav. & Trust Bdg.
PORTLAND, ME.
Assay Congress S
PORTLAND, ORE.
Railway Exch
PROVIDENCE R.
PROVIDENCE R.

Newark, N. J. 790 Broad Street PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA. Farmers Bank Bldg. 396 Congress Street

PORTLAND, ORE. Railway Exchange Bldg. Providence, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. San Francisco, Cal. 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass. Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W. WILKES-BARRE, PA. Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. Crocker
F. G. DRUM

JOHN S. DRUM
F. T. Elsey
D. H. FOOTE
W. G. Henshaw
A. F. Hockenbeamer

JOHN D. MCKEE
JOHN A. McCandles
C. O. G. MILLER
NION R. TUCKER
GEORGE K. WEEKS

OFFICERS

F. G. DRUM											President
John A. Britton										7	Vice-President and General Manager
A. F. Hockenbeamer	١.									S	Second Vice-President and Treasurer
D. H. FOOTE											. Secretary and Assistant Treasurer
Jos. C. Love											Assistant Treasurer
Chas. L. Barrett .											Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM								Consulting Engineer
W. B. Bosley								Attorney
R. J. Cantrell .								Property Agent
J. P. Cognlan								. Manager Claims Department
C. P. Cutten								Attorney, Rate Department
K. I. Dazey								Manager of Collections
								f Engineer Electric Department
								Manager Land Department
Jno. H. Hunt								Purchasing Agent
								Engineer Electrical Construction
								Chief Engineer Gas Department
								Manager Publicity Department
L. H. NEWBERT .							M.	anager Commercial Department
								General Auditor
GEO. C. ROBB								Superintendent of Supplies
W. G. VINCENT, JR	ι.							Valuation Engineer

DISTRICT MANAGERS

	DISTRICT MAINTGERS	
DISTRICT	HEADQUARTERS	MANAGER
Alameda County .	Oakland	. F. A. LEACH, JR.
	Chico	
Colgate	Colgate	MILES WERRY
Contra Costa	Martinez	Don C. RAY
DE SABLA	De Sabla	I. B. Adams
	Colfax	
Electra	Electra	W. E. Eskew
	Fresno	
	San Rafael (Ac	
	Marysville	
	Napa	
	Nevada City	
	· · · · · · · · Petaluma · · · · · · · ·	
Placer	East Auburn	. H. M. COOPER
	Redwood City	
	Sacramento	
	San Francisco	
San Joaquin	Stockton	J. W. HALL
	San Jose	
	Santa Rosa	
	Dixon	
	Newman	
	Vallejo	
	Woodland	

Pacific Service Magazine

Volume X



Number 5

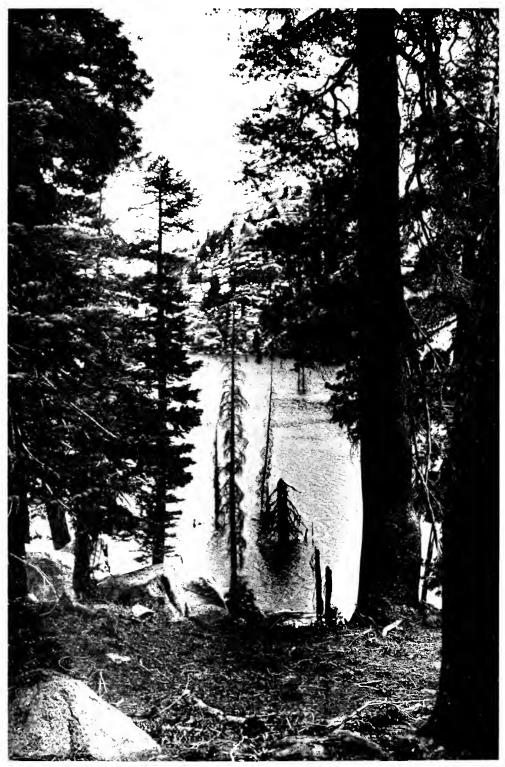
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for October, 1918

A GLIMPSE AT MEADOW LAKE, ALPINE COUNTY .	Frontispiece
SUBMARINE GAS SERVICE—How "Pacific Service" was brought across the Oakland estuary to the Bethlehem shipbuilding plant on the Alameda shore.	W. M. Henderson 131
MAJOR SEVER'S WAR EMERGENCY WATER- POWER PROGRAM FOR NORTHERN CALIFORNIA	F. S. M 140
A SYMPOSIUM ON FUEL CONSERVATION .	F. S. M 141
OUR PACIFIC SERVICE EMPLOYEES' ASSOCIATION	142
CAPTAIN ALBERT R. THOMPSON—An Appreciation	C. L. B 148
THE "PACIFIC SERVICE" ROLL OF HONOR	149
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A.F.Hockenbeamer 152
EDITORIAL	154
TIDINGS FROM TERRITORIAL DISTRICTS .	156

Index to Advertisers

iii	Pelton Water Wheel Co	ν
νi	Sprague Meter Co	v
i	Standard Underground Cable Co	Y.
iii		
iv	Welshach Company	vi
ver	Western Pipe & Steel Co. of California	iv
ν		
ν	Wood, R. D., & Co	ii
	vi i	vi Sprague Meter Co



A glimpse at Meadow Lake, one of the Pacific Gas and Electric Company's storage reservoirs in Alpine County.

Volume X

OCTOBER, 1918

Number 5

Submarine Gas Service

How "Pacific Service" Was Brought Across the Oakland Estuary to the Bethlehem Shipbuilding Plant on the Alameda Shore

By W. M. HENDERSON, Assistant Engineer, Gas Department

The gas industry, among others, heeded the call that sounded through the nation and early in the development of what is accepted as a new era in the shipbuilding industry offered itself as a true conserver of time and a stimulator of production. Where its service has been accepted this fact is recognized, and among the results to which our company points with pride is the extension of gas service to all the shipyards that have sprung up around San Francisco Bay.

The most recent installation on record, and one which involved work of an unusual character, is at the Bethlehem shipbuilding plant at Alameda. This plant is in process of expansion and is being provided with the latest equipment and devices to cheapen the cost of production while meeting the demand for increased output. Gas as a fuel will be exclusively used for rivet-heating in the boiler shop, plate shop and on the shipways, for pipebending, annealing plates, bending shapes,

in the copper shop, for annealing boiler tubes, in the galvanizing plant, for preheating torches, core ovens, in the brass foundry and in many other places and ways. None of these features are experimental but all are in daily use at other plants of the Bethlehem Company, so that they knew what was wanted and how to go about it.

Early in the year negotiations were started to

get gas service to this plant. The quantity that was required was estimated at 150,000 cubic feet peak hour. This was so far in excess of the available source of supply in Alameda that it was necessary to go back to the gas works on the Oakland side of the estuary and extend a new main to the plant.

Alameda is on an island. To serve it with gas means to cross the water with a submarine pipe, as the bridges connecting it with the mainland are all of the draw type. A line was laid out which provided for the installation of about 5,000 feet of 8-inch tubing from the compressor station at Second and Jefferson Streets to the shipbuilding plant, crossing the estuary at Alice Street. This idea was later altered at the request of the Bethlehem engineers, on account of change in yard plans. A crossing at Madison Street was eventually decided upon.

In laying out the job 8-inch tubing was selected, or rather accepted, as it was



The starting point on Madison Street, Oakland, looking toward the works. Eight-inch pipe ready to enter the water of the estuary.



Looking north on Madison Street. Pipe line passing under railroad tracks.

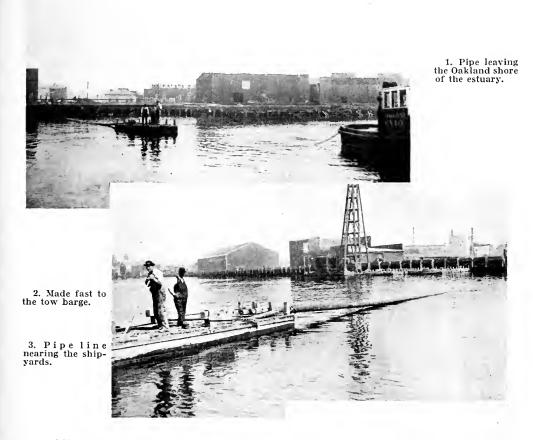
available for immediate use. This weight of pipe is perfectly satisfactory when properly treated and installed for general high-pressure gas distribution, but for marine work it is frail and liable to kink unless very carefully handled. Standard weight pipe or extra heavy wrought iron is the only suitable pipe to install for a submarine high-pressure gas transmission line, but when, as in this case, time is of the utmost importance, it is advisable to use what is available.

The Oakland estuary is navigable and the channel is kept clear by the United States Government. To eliminate the risk of having to move the pipes in the future a permit was obtained from the Government for crossing the channel with the pipe at Alice Street. The depth established by the War Department was the minimum of 35 feet at low water. This meant to dredge the channel, which aver-

ages about 25 feet. It was planned to side-cast the excavated mud, the trench walls to slope so that the bottom of the trench would be 5 feet wide and the top about 40 feet. This involved moving considerable mud, but by shoring the sides it was possible to retain the trench without danger of filling too rapidly. about the time the contract was let for the crossing location dredging, shifted to Madison Street, so a new permit was necessary from the Government. The new permit placed a minimum depth of 40 feet and required the removal of all excavated mud and earth to some suitable ground. These conditions. dumping added to the fact that the crossing at Madison Street was 1300 feet as against 750 feet at Alice Street, delayed the work and increased the expense considerably. While preparations for dredging and its accomplishment were in progress the



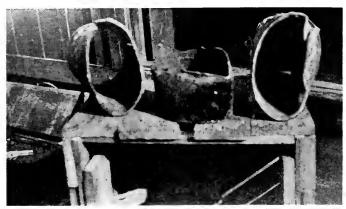
Pipe line on its way to the water, passing under railroad tracks and wharf.



assembling of material for the pipe line itself was accomplished and the installation of the pipe as far as the crossing was completed.

This line of 8-inch pipe was all welded and painted with "Floateen," an asphalt preparation, and coated with P. & B. pipe covering, both products of the Paraffin Paint Company of Berkeley. When the line was completed as far as Madison Street preparations were made for the crossing. The pipe was welded together in two lengths, about 700 feet each; these were tested, then painted and coated with a triple wrapping of the Floateen and P. & B. pipe-wrapping paper. The pipe was capped at the end that entered the water, as it was desired to take advantage of the displacement of the pipe and float it across the channel. Then the first





Pieces of broken pipe ends show damage to the pipe through the accident.

length was mounted on dolly rollers and its nose pointed for its destination.

The starting point for the launching of the pipe was not ideal, as the foot of Madison Street is part of the Santa Fe freight yards. To enter the pipe in the water it was necessary to excavate under four tracks and open a portion of the bulkhead under the wharf. was in readiness a line was made fast to the pipe and carried to a tug that was standing by. On the shore a team of horses were hitched to the pipe to help The start was made in the it along. morning and rapid progress was made, the pipe floating out in the channel with ease. The fact that the size and weight of the pipe permitted the pipe to float about two-thirds submerged was conspicuous enough when looking down on it, but from up or down stream it could not be noticed. Considerable trouble was encountered with traffic, so a launch was continually in service to keep boats from endeavoring to cross it. When the first length of 700 feet had been run into the water a halt was called till a second section could be welded on to the first. This was rapidly done and the pipe again started on its way.

Navigation at all times was possible, the channel being clear in front of the tug until it had reached about 900 feet out from the Oakland shore. At this period fresh water was allowed to enter the line, and as it filled the pipe sank. All the time the tug and horses continued to move the pipe. In this way the channel was opened behind the tug or over the pipe, while the forward progress of the pipe closed the channel on the south side. The water in the line made progress slow as the pipe in places dragged the bottom; by the time the pipe reached

within 200 feet of the Alameda shore it was necessary to run a line ashore and through a snatch block back to a pile driver. The pile driver then relieved the tug and took up the burden. To illustrate the tremendous pull necessary, a 14-inch hemp rope parted when the pipe line was within less than 100 feet of its destination. So long as the pipe had been kept moving it went along well, but when progress stopped to change the line to the driver it was with difficulty that a start was again made. Nevertheless, by persistent effort and patience the pipe was at last run well up on the beach at the Bethlehem plant.

Here the work stopped for the day. The line was left full of water, the idea being to let it settle properly in the trench and thus find its own resting place. For the next few days, work on the shore was carried on and soundings were made with a lead line to determine the location of the pipe in the channel. This was rather difficult out in the stream, as the depth and the mud that rapidly filled the trench made the pipe as elusive as a needle in a haystack. At a point some 400 feet out from the Alameda side the pipe was found to rest outside the excavated trench; this was due to the difficulty encountered with the tide when the line was floating. At all other points the line was apparently all right and in the trench.

On the Oakland side a wharf had pre-

vented the dredge from excavating the full depth trench right up to the shore line. The wharf was about 40 feet wide and the water beneath it about 6 feet deep, which dropped down to 30 feet at the wharf front. This left a shelf that the pipe lay off from, so that it did not meet the trench bottom for about 150 feet from shore. As the wharf was not used for dockage, and lay somewhat behind the pierhead line, with the space in front of it more or less spotted with submerged

decided not to wait any longer for its settlement and, also, to abandon the idea of installing a drip on the Oakland side; instead, to at once raise the line, cut it and place an elbow in it so as to bring it to the wharf in the bottom of the dredged trench and then up and under the wharf to the line on shore. This would make a better job. Once decided on, no time was lost in rigging up to accomplish it.

It was a very difficult piece of work

and could only be done at periods when the tide was favorable. A boom was made fast to the wharf and hung out over the water directly over the



butts of piles, it was considered safe to let the line lie as it did for the time being.

While work and preparations were going on for tying in the line, installing

the drips, and placing the weights on the pipe before removing the water, observations were made of the pipe line. No change was noted, so evidently it rested from the first as deep as it would ever sink; but it was noted that the pipe lying out from the Oakland shore was not as secure as had been expected, and that at time of low water it was a possible menace to navigation, or, more likely, navigation a menace to it. So, it was

1. Derrick barge picking up first section of broken pipe. 2. Men casting overboard the 60-ft, section that was torn from the line.

pipe. A cable was made fast around the pipe and a lift taken, just enough to raise the pipe above low tide. It was then cut outside the wharf, the proper point determined by measurement. To the submerged pipe was then offered an elbow with about 28 feet of pipe extension and an elbow at the other end. To say the least this was rather awkward to manipulate and weld to the end of the line protruding from the water. When

accomplished, tested, p a inted and wrapped it was lowered to place and the upper elbow tied into the shore line. By this time the valves had been installed on shore, so all was ready for the test of the line. The weights not having been placed on the line a cold-water test was only possible, as the line was still full of water.

A suspicion prevailed that all was not well, and so, when the test developed that the line was broken about 150 feet from the Oakland shore, it was accepted with

the best of good grace, for it simply postponed the completion of the line.

During the time that the elbow was being installed the weights

broken pipe a first-hand impression was obtained of the bottom of the ditch and the way the pipe lay. Rather than chance the laying of weights on the pipe it was decided to join the weights together with wrought iron, chain and then lower them so that the weight would hang like saddle bags over the pipe. Twelve double weights were made and finally placed about 100 feet apart, the total weight being about 100 per cent in excess of the weight of water displaced by the pipe line.



Floating into place the 60-ft, section.
 The final weld—a most difficult job on the water.

were made for sinking the line. These were made of concrete. At first it was hoped to cast a block with grooves through the base that would straddle the pipe, each block to weigh about three-fourths of a ton when submerged. Two eyebolts protruded from the top of the blocks, so that slip hooks would pick them up. A derrick barge and diver were to be used in placing the weights. After a diver had been secured to examine the

The repairing of the break and placing of the weights were in order immediately, as the Bethlehem plant was rapidly getting ready to utilize the desired gas

service. A derrick barge, diver and about six deck pontoons, launch, skiff and plenty of tackle were provided. The line was again cut under the wharf, the boom used to pick up the pipe at this point. The derrick barge moved out in the stream and with lines out to shore held a position to pick up the pipe. Three lines were dropped into the water from the shackle of the sheave on the boom. The diver found the pipe end and placed

a line, then moved along and placed a second and a third. The pipe was then lifted from the bottom and made fast to the pontoons. The pontoons were so rigged that two were fastened together by a superstructure, with a piece of 8-inch pipe extending over each. This pipe with the aid of chain tongs could be used as a windlass. In this way the pipe line

lay between two pontoons and could be raised and lowered at will.

The derrick now moved out farther into the channel and proceeded to raise the other end. It was necessary at this point for the diver to work through eight feet of mud before he could reach the The raising of this end of the pipe was easy, for it developed to be a length of sixty feet broken out of the line. The first break upon examination indicated that it had been struck, without doubt by a ship. The second break had evidently been caused by the same blow, as the pipe about sixty feet inshore from the first break showed a kink. This kink and the break farthest out were due to the bending of the pipe when the boat struck it.

The 60-foot piece was brought ashore



Finis. Lowering double weights to hold the pipe line on bottom of estuary.



The diver at work. Weather makes no difference to him.

and the ends, which had been crushed to an elliptical shape, were cut off and a sufficient length of pipe welded on to replace them. When all was ready again it was cast overboard onto two pontoons and floated out to place where it was welded to the piece that had already been lifted.

This was as difficult a job as has ever been attempted in welding gas pipe. The ends of the pipe were brought together between one of the double pontoons and fastened with a home-made pipe clamp somewhat on the principle of a belt tightener. This rig held the pipe ends rigid, but the difficulty of welding was hard to overcome on account of the wash of every boat passing up and down the estuary. This same constant rolling of the pontoons made it a trial for the

welder to hold the torch steady in cutting the ends. In welding it was necessary to go around the pipe, that is, make an upside-down weld, as it was impossible to turn the pipe. In doing this the welder's head was partly submerged in the water. That the job was accomplished was due to the persistency of some men.

The scene of action now moved out farther

in the stream, the next break being over 200 feet from shore. The derrick barge took up its position and the same idea was followed. The diver made fast the lines, the first one about 50 feet back of the pipe end, the next 40 feet back of it and another 40 feet farther out. were maintained different lines at lengths so that the pipe would come up on an angle. Out beyond the last line a pontoon was placed, rigged so that it would take up the strain as the pipe was lifted. The fact that the pipe must be lifted over 40 feet to clear the surface of the water made it necessary that every precaution be taken so that it would not kink. All the lines were maintained tight; this was accomplished by the diver as the lifting proceeded. The object of taking the first bite about 50 feet back of the end was that the end on coming up would point down and any mud would be washed out of the pipe end. Also, by handling it this way the length of 50 feet was quite limber and easily managed in making up to the floating pipe waiting to be joined to it.

As the barge was so far out from the bank it was difficult to keep it stationary with the lines from the shore, and the anchor was useless on a falling tide. care had to be taken in selecting the proper time to do the work. Through a late start, one day's work was lost after the pipe had been picked up. At the next attempt more speed was made, and before the tide ebbed the pipe was brought to place, the damaged end cut off and the weld made, making the line once more complete. Before lowering the line a test was made of the two joints under pressure; found to be tight they were painted and coated. Lowering was easy; water was run into the pipe while the lines were slacked off. So far, so good. Work with the derrick barge had started on Wednesday and this was Saturday night.

The following week the placing of the weights was to complete the job. On Tuesday the derrick barge loaded up with the concrete weights cast off from the

wharf. To properly place the weights a bridle was made with a span of about six feet and a slip hook hung from each end. In this way each weight would be picked up with the connecting chain hanging loose. The boom would swing the two weights out into the water and lower them; the diver would then go down with a leader line to the weights and locate the pipe. The boom would swing into place, and after a struggle, and sometimes without, the weight would be placed astraddle the pipe. The best time made to properly place a weight was thirty minutes; the longest was four hours. Sometimes the pipe would lie up against the bank; in such cases it was very trying to get the weight astraddle of it. Most of the trouble and struggle was with the tide, as it was hard to hold the barge when the tide was running.

On the first day of placing weights a misfortune occurred. A cable snapped on the barge and shackles, sheave and cable on boom were lost overboard; and, on top of this, the anchor line parted. The placing of but one weight was accomplished on this day. The next day the barge was not available, having been removed during the night to other work. The day was lost, but the barge was found and brought back to the job ready for work on Thursday, September 12th, registration day and the day it rained. This day in the rain six weights were placed and when through the driest man on the job was the diver.

Next day, Friday, the 13th, everybody was "up and at them" to finish the job. All the weights were now placed well out beyond the center of the channel so the barge moved over to the Alameda shore to work out. The first difficulty encountered was foreign to the job; the barge lay directly in front and under one of the hulls under fabrication in the shipways. The rivet heater boys took to amusing themselves by tossing hot rivets at the driver's tender and pumpmen. No harm resulted, but for the time the atmosphere was unpleasant.

This day proved the toughest of all before it was over. The first duty to perform was to locate the place where the pipe line was out of the ditch and to pull it back into place. The diver soon located the place and found about 40 feet of pipe lying on top of the bank. Great care had to be taken in pulling on the pipe as it was imbedded in mud. By moving the line along the pipe after each tug the pipe was brought to the edge of the ditch, into which it slid of its own accord. Half the day was spent before any weights were placed, so a full day's work was left to do in the afternoon. The first weights went overboard at the rate of one every forty-five minutes and it looked as if we would "knock off" early for once. But along about 4 p. m. luck changed with the weather; the rainstorm broke, and the sun now shone. In contrast to this, things looked black to us. The pipe was found out of the ditch farther out in the channel. The tide was now running out strong and it was hard to hold the barge as the anchor line slackened and the lines to shore were about 400 feet.

When the line from the boom would be fast to the pipe the barge would swing on this bite, for the pipe was well anchored in its covering of mud. To accomplish anything at all an attempt was made to tow the barge with the tugboat and, at the same time, keep the line fast to the pipe. Tug and tide did more than we bargained for, as the pipe was pulled clear across the ditch before the barge, caught by the tide, could be brought to a halt. This little struggle consumed the remaining daylight. But one weight remained, so it was not time to quit even though time and tide were against us. The same trouble continued in the fastrunning tide; the anchor line would continually slacken and the line from shore

was too long to be of much service. The tug only was of use, as the barge would swing on the line from the boom to the weight. Not being able to keep the barge lines taut it was almost impossible to swing the weights, as the barge instead would move. At last, with persistent effort and perseverance, the last weights were landed astraddle of the pipe.

The idea of drips on the submerged pipe for removing the condensation was simple. It was intended to extend into the pipe line from each shore about 500 feet of three-quarter-inch pipe, through which, with the pressure on the main pipe, any liquid could be removed. was difficult to determine the lowest point on the line, but as very little condensation was expected the matter of drips was not of great importance. At any rate, it was always possible to blow the line clear, for 40 pounds of pressure was available, an amount sufficient to raise any liquid a height of 85 feet; whereas the total head from maximum depth of line to blow-off is not in excess of 60 feet. The drip on the Oakland side only was abandoned. The line was blown clear through the 8-inch valve. On the Alameda shore this was easy with the 40 pounds of air pressure maintained back of the water in the line.

When it was certain that all the water was out and the line tested O. K., the gas was turned on. The line was purged of air in the usual way and everything was left ready for business.

The Bethlehem Shipbuilding Company established a station in the yard close to the water edge. In this station are located four Sela machines for premixing the gas before distribution through the works. In this building are also stationed meters and governors.



Major Sever's War Emergency Water-Power Program for Northern California

Major George F. Sever, U. S. A., special representative of the War Industries Board, Power Section, was the guest of honor at a luncheon of the Electrical Development League held in San Francisco on October 16th.

The occasion was of unusual interest, for it gave Major Sever an opportunity to announce in detail his recommendations to Washington for a war program of immediate electrical power development in Northern California. In his address Major Sever declared his belief that immediate action was necessary. He regretted that not a single kilowatt unit had been developed in the past two years and that it would not be possible to develop any in less than a year. Major Sever then announced the following recommendations:

Sierra and San Francisco Power Company. The development of a 9000-kilowatt unit on the Stanislaus River. This to be followed by the construction of another unit of similar size upon the enlargement of the Philadelphia Ditch from 50 to 100 second-feet capacity. In addition, the enlargement of the penstock at the Stanislaus plant, which will result in a gain of 3000 kilowatts.

Pacific Gas and Electric Company. The construction of unit No. 2 on the company's South Yuba-Bear River development, capacity 25,000 kilowatts. Sever's recommendations include also the raising of Fordyce Dam 21 feet and the raising of Spaulding Dam 10 feet. These two pieces of construction work will give additional kilowatt-hours, if not actual kilowatts. There is also another water storage proposition in contemplation up on the hills beyond Lake Spaulding. This last, however, is for future consideration.

Great Western Power Company. enlargement of the storage capacity of Lake Almanor fifty per cent and the immediate construction of a 40,000-kilowatt plant on Butte Creek.

The development of a 32,000-kilowatt plant at Sheep Rocks on the Pitt River, this plant to communicate its supply by a 110,000-volt line to the interconnecting systems of the three companies before mentioned.

This hydro-electric program measures

up 118,000 kilowatts. Other projects were referred to by Major Sever in his discourse, notably our own company's development on the Pitt River, but these are not included in the immediate list. Major Sever's present program includes some steam construction work, prominent among which is the installation of a 15,000-kilowatt turbine at the Pacific Gas and Electric Company's Station A in San Francisco. But Major Sever expresses the hope that it will be possible eventually to eliminate the use of fuel oil required for the steam stations in California.

In the course of his remarks Major Sever referred briefly to the Hetch-Hetchy development which is being encouraged by the municipal government of San Francisco. Regarding this he said: "If there is any power outside of the Federal Government that can keep a municipality down to earth I'd like to see it."

Major Sever stated that in carrying out this proposed war emergency program the Federal Government could help only in two ways, either by a direct loan or a grant from the War or Navy Department or the Emergency Fleet Corporation, or all three of them. In the meantime he thought that the several communities of California should support the power companies in their midst in the matter of rates and not hamper them in the course of their legitimate business by any policy of obstruction.

Mr. John A. Britton, who had just returned from a water-power campaign in Washington, made a brief address in which he spoke of the same old ignorance of the western situation that still prevails at the Nation's capital among department officials and members of Congress alike. He complimented Major Sever on having done more than any man or body of men to open the door that had been closed so long. He thought the thanks of all the power men of California were due Major Sever for his activities on behalf of justice and business common sense.

Captain H. Jackson, in introducing Major Sever to his audience, spoke of him as a man who did not stay at home poring over maps and prospectuses, but got out on the job and saw things for himself.

A Symposium on Fuel Conservation

"Fuel Conservation in California" was the subject of a joint discussion among members of local sections of the various American engineering societies at the headquarters of the Engineers' Club in San Francisco on the evening of Thurs-

day, September 26th.

Mr. E. C. Jones, chief engineer of the Gas Department, Pacific Gas and Electric Company, presided over the symposium, which went far to call public attention to the actual conditions in California resulting from the shortage of fuel, particularly oil, and to suggest a practical remedy for their amelioration. Prominent among those who addressed the meeting was Mr. A. E. Schwabacher, the United States Fuel Administrator for California, who urged rigid economy of oil fuel, for as much as could be turned out was wanted for the ships that were carrying men and supplies "over there." Mr. Schwabacher referred to the recent interconnection of water-power plants belonging to prominent leading power companies of Northern California, and thought that not only economy but a great improvement in working conditions had resulted therefrom.

"Energy Will Win the War" was the theme of an address by Mr. A. H. Marquart, a prominent civil engineer. It was all very well to talk economy and discrimination, but that, he thought, would not solve the problem. The real solution would be found in the inexhaustible supply of "white coal" to be found in the mountain streams. Unfortunately, the development of California's unbounded water-power resources had been hampered by unfavorable laws, so that a point of positive stagnation had been reached. Too much red tape, of course. Power was needed for normal purposes even in war times, and the speaker urged a change of laws and the adoption of a liberal policy on the part of those in

authority.

Mr. D. M. Folsom of the United States Fuel Administration, Oil Division, speaking on "The Future Requirements of Oil," said that twenty-five million tons of new American shipping would be afloat by 1920. The railroads of the country would no longer be allowed to stop at the ocean. Oil would have to solve the transportation difficulty, consequently it must be conserved as far as possible for this purpose.

Water-power development, he thought, must be called for and a policy of ultraconservation must give way to a policy of business common sense.

"Intelligent conservation means intelligent use, not the crippling of production facilities," declared Mr. Folsom, amid applause.

A paper by Mr. John A. Britton was read in his absence by Mr. Van E. Britton. The subject of this was "The Use of Gas as a Conservation Measure." In this Mr. Britton declared his belief that electricity would never measure up with gas as a heating agent when the materials for making gas were readily obtainable. Gas was not only efficient but conserved manpower. "There is no argument against it," declared the writer.

Mr. H. G. Butler, Power Administrator for California under the direction of the State Railroad Commission, read a paper "Electrical Consolidations upon Their Relations to Fuel Conservation." He expressed the opinion that the time had come to speed up on production, which meant power, and that the way to stop waste of fuel was to harness up the streams. Meanwhile the interconnection of power plants had done good. It had resulted in a mutual saving, while not necessarily eliminating competition.

Mr. P. M. Downing, on the subject of "Sources of Energy Supply," gave figures to show the ridiculously small amount of water power actually developed in California as compared with the amount of potential development in our State.

Mr. Harry S. Markey presented statistics on the consumption of oil in large steam electric plants. Major George F. Sever of the United States Government service, presented details of a war emergency power program which will be found elsewhere. Mr. W. J. Davis, in a paper on "Railroad Electrification," told of the saving of fuel to be effected from this as well as greater efficiency of operation. Professor Edmond O'Neill of the University of California addressed the audience on "The Chemical Side of Fuel Conservation." Captain R. W. Brewer of the British Army gave some interesting information upon heat saving in England.

It was undoubtedly a meeting of the right character, and good and practical

results may come out of it.

Our"Pacific Service"Employees Association



One of the most successful gatherings of the present season was that held on the evening of October 8th in San Francisco when Governor William D. Stephens of California appeared as the leading attraction upon the program of entertainment and instruction.

The Governor was in the midst of a political campaign, but he found time to run down and talk to the men and women of "Pacific Service" in his own genial way. He spoke strongly on the subject of patriotism "in deed as well in word."

"An American citizen must not only do something for Old Glory, but must do all he possibly can or he will be found wanting," declared the Governor with emphasis, adding: "Should he be found wanting, then God help him! We want men one hundred per cent patriotic, no more, no less. We have no place for others at this time. For we are embarked upon an enterprise which must be carried through to a successful completion. We are in this war and we won't stop that war until the enemy has been overwhelmingly defeated. Our boys are over there and have given their all; some their limbs, some their lives. We, at least, can lend our money to the Government that stands behind those boys.

"The service flag has come into our lives to take its place beside the flag of our nation. We must measure up to it. We must not encourage peace talk, but we must keep on and on until our boys in khaki march into Berlin."

The Governor was introduced to his audience by Mr. Leo Susman of the "Pacific Service" Law Department, and was most cordially received. While he did not make a lengthy address his remarks were delivered with a punch that brought him ready response from his hearers.

Another stirring address was delivered by Mr. R. B. Gaylord, a San Francisco attorney, who rendered yeoman service to the Liberty Loan campaign. He dwelt upon the loan as entirely a business

proposition. He pointed out that the six billion which the Government was engaged in raising represented one-eighth of the people's income for the year. It meant an average subscription of \$200 from every man in San Francisco, on the basis of that city's proportion of the amount to be raised.

"It is no time to mince matters," said the speaker. "War, dire war, is on and sacrifice from everyone is called forth. The responsibility lies on the man at home just as much as on the fighter in the trenches."

Mr. Gaylord's address provoked an enthusiasm that brought Messrs. Earl Fisher and Harry Bostwick to their feet with the suggestion to appropriate \$1,500 of the Association's fund at hand for the purchase of three \$500 bonds of the present This was put in the form of a motion by Mr. Bostwick and carried with cheers.

An excellent program of vocal and instrumental music was given. Mr. Easton Kent featured as the solo vocalist and Miss Alice Davies of Oakland charmed the audience with selections on the violin. Miss Jorgenson appeared in some clever costume dances. Mr. Lowell Redfield, accompanied by Mrs. Redfield on the piano, as usual led the assemblage in patriotic songs.

At the meeting held in Oakland, at the rooms of the Ebell Club, on the evening of September 24th, the members of the P. S. E. A. had the great pleasure of listening to an instructive address by Professor Alexander S. Kaun of the University of California on "Leadership in Russia."

Professor Kaun is an expert upon this subject. He occupies the chair of Slavic Languages at the University of California, and in the course of his studies has gone deeply into the situation in that great, dark country from which so much has been expected and from which much may yet be realized. In the early part of the

present year the members of the Association had an opportunity to hear Mr. Jerome Landfield on the vexed Russian question. Mr. Landfield, it will be remembered, lived in Russia for several years and formed an intimate acquaintance with its people and manners. For some months past he has been in Washington at the call of the Government in an advisory capacity on this very Russian situation. It was particularly interesting, therefore, to hear Professor Kaun take up this apparently insoluble problem and discuss it from the point of view of the Russian spirit, for the lack of development of which the Russian system, or, rather, want of system, has been entirely responsible.

Professor Kaun told us that Russia had never had a leader, that never had any man worthy of the name risen to guide those people out of the wilderness. Still, he asserted, there was a spirit there, a national feeling, and to this he looked to assert itself in definite fashion for the solution of the national problem. He spoke of the mir, the Russian community proposition, which has been widely discussed in the newspapers and magazines. He regarded this as the most democratic idea in the world, but one entirely of theory and not yet, perhaps never to be,

worked out in practice.

However, Professor Kaun felt convinced that the Russian people would work out their own salvation in the end. The only thing to do, he felt, was to let them do this for themselves. In the meantime it would be the duty of the Allies to give them all the assistance in their power, supplying them with the necessities of life and doing everything in preparation for the day when Russia should rise out of chaos and take a place among the twentieth century nations of the world.

Two changes are recorded in the personnel of the Executive Committee. Mr. J. Charles Jordan of Alameda County District has been selected to succeed Mr. H. P. Pitts, who has retired from the company's employment to take service elsewhere, while Mr. R. Jenny of the Auditing Department takes the place of Mr. B. J. Crowley, who has been called to the service of his country.

Two important meetings of the Executive Committee took place during the past month at which matters of importance to

the Association were discussed. It was intended to hold an out-of-town meeting at Auburn on October 19th, and to hold an Association dance at Oakland on the 31st of the same month. Unfortunately these gatherings had to be called off, but it is understood they are merely postponed until conditions warrant their being held.

The "Pacific Service" Employees' Association made a great stride forward when, in 1917, it brought within its fold the women employees of the Pacific Gas and Electric Company. It has been the endeavor and aim of the officers of the Association to interest and induce the active participation by the women in all of its activities. The work of the Association extends beyond merely conducting monthly meetings, with which all are familiar, and one of its main functions is to look after the physical and mental wellbeing of its members. In furtherance of this policy the Association, with a view to satisfying a long felt need, has authorized the preparation of a rest room for the women. Every effort has been made to make the room both comfortable and attractive and the Committee on Women's Affairs, which has the matter in charge, advises that the room is to be located at 445 Sutter Street, room 612, and will be opened in the early part of November.

Meanwhile the lunch room which was organized some months ago has been comfortably fitted up and is in great demand every workday among the women em-

ployees at headquarters.

It will be interesting to the readers of Pacific Service Magazine to learn of the safe arrival in Manila of Mr. John A. Britton, Jr., and his wife. Mr. Britton writes a very interesting letter to Mr. Henley regarding his trip over. The following extract concerning one of our talented members of "Pacific Service" speaks for itself: "Walking down the street today I

"Walking down the street today I passed a music store and saw a copy of 'America, I Love You' in the window. I walked in and asked to see a copy of it. It is our old friend Ridgway's song from cover to cover, but the names on the cover are Leslie and Gottle. I understand that Manila took to it to beat the band and that it is very popular. Better ask Ridg if he sold his rights. It sure looked good and was almost like getting news from the P. S. E. A., for which I still have a warm place in my heart."

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

P. M. Downing has received the following letter from Lieutenant Merl W. Bremer, who was formerly his chauffeur,

but who is now in France:

"Well, here I am somewhere in France, and life don't seem so much changed as I thought it would be. I am getting along very well with my French. The people of France all give us a very good welcome. Our trip across the ocean was very delightful and a little exciting.

"I am about four hours from Paris, but don't think I will be able to get there for some time, as I am in charge of the con-

struction of a steam power plant (electric)-all the electric installation of a city, including wiring, inside street lights, etc., for a city of 50,000 people. So you see I will be busy for some time to come.

"I hope the office force has not forgotten me and the others who have come over here, as it is a hard row to hoe and any little letter or postcard is certainly appreciated. I have not as yet got track of Bonhert or Williams, but will in time. We are in a very nice part of France with her famous chateaus and castles. They are very interesting. The people around here are very thrifty, saving everything they possibly can. After gathering the grain

the women and children go through the fields and pick up by hand any grain that might be left. The land is very intensively cultivated. Instead of using wire or wood fences they throw up a mound

of earth from four to six feet in height and plant berries, etc., on them. These are the divisions of their fields. The houses are all made of stone. The streets of the cities run in any old direction and are very narrow and all are paved with cobblestones. In the last town where I was they had an electric car. Some car. It had a seating capacity of about four persons and standing room for 100. If the motorman wanted a drink he would stop his car in front of a commerce de vin and hail some friend and go in and get one; meanwhile the car stood there

until he returned. Some system.

"Will write again soon, but a few lines from the good old U. S. A. will be appreciated very much."

Sergeant Crawford C. Hill of the 364th Ambulance Company has written from France. describing his interesting but uneventful trip across the water and stating how good the American camp in France looked to them at the end of their journey.

The following letter was received from Sergeant Martin J. Gara, who is serving in Italy, and is of great interest:

"I suppose you will be somewhat surprised to hear from me from away over here. We are

here with the Medical Corps attached to the Italian Army, having arrived here June 27th. We had a very pleasant voyage, with little or no excitement, and were very glad to get here after our long



Private F. L. Mix, "A" Battery, 147th Field Artillery, A. E. F. (Formerly of Solano District.)

and tiring trip. We have a beautiful site for our camp, which is located on a hill somewhat above sea-level. This is a very beautiful town and has many large building of historical interest. I have never before seen such oil paintings as I have since I have been here.

"I have been placed in charge of the warehouse for this outfit and am kept very busy. I might also state that the experience I received under your guidance in your office has proved quite valuable to me in my present undertaking."

Corporal J. Merkelbach of the 322d Field Signal Battalion, who was formerly an operator in the San Francisco District, writes as follows:

"Have been in France over six weeks. Weather is fine here now. Saw about four hundred prisoners come in the other day. There is lots of action here. We have taken over the sector and are giving the Boches hell. Just finished running a telephone line behind the lines and am waiting for the next detail to go out. Will probably see lots of action on the next job as we are working right through to the front. Notice my new address."

George A. Nelson formerly of the Gas Department at San Leandro, writes from Camp Fremont that he has signed up to go as a gas man in the engineers, but does not know whether he will be accepted or not.

The members of the Pacific Service Employees' Association who enjoyed the "magical stunts" performed by H. S. Dusenbery, late of the Contra Costa District, will be much interested in the following letter from him:

"Having a few minutes spare time I thought I would drop you a line regarding my work here in the service. When I left the Pacific Gas and Electric Company I was sent to Vancouver Barracks, Washington. Here I learned that I was in the Spruce Production Division of the Regular Army. The purpose of this branch of the service is to obtain spruce from the woods for airplane construction. Troops are sent out to the forests of Washington to build railways and open up this portion of the world so that the spruce can be easily transported to the airplane factories.

"In Vancouver I received a regular military training, but as I have had some of that before (at the University of California) I speedily received a promotion to the grade of corporal. After having completed this preliminary period I was again promoted, this time to the grade of sergeant, and sent out in the field with a regular organized squadron of 150 men. My duty in this squadron is to look after the paper work and 'red tape' end of military affairs. I have charge of the office force of this squadron and you would be surprised at the amount of clerical work involved to keep tab on 150 men.

"I would greatly appreciate it if you could send me the Pacific Service Magazine each month as I am anxious to learn what my friends in the company are doing.

"You might be interested to know that I have some of my magical stunts along with me and often amuse the men here



Lieutenant Leon F. de Fremery, Aviation Corps, Ellington Field, Houston, Tex. (Formerly of Rate Department.)

after their day of work is over. We get very little amusement of any kind here, and such things are always welcomed by the men.

"Here in the woods we live the same as the men in France do. We have the regulation field equipment and move camp from time to time as the work progresses, carrying our equipment with us. They try and send a motor truck to us each day with the mail and fresh beef, etc., so we are not so bad off after all."

Writing from England, Lieutenant Malcolm L. Hunt, formerly in the Electric Distribution Department in Oakland, says:

"We had a wonderful trip over and you can tell your friends that if they think the United States had no protection for her men while at sea they are very badly mistaken. We were so well protected that it was an impossibility for a submarine to get within two miles of us on the whole trip across. You would think the ships were a company of well-

trained soldiers. They have their formations and are all governed by one commander, who can be at any point in the convoy in a very short time to direct the movements personally. We did not even see a submarine on the whole trip, except in the harbors we visited.

"England is a very beautiful country. The fields are very small, but highly cultivated and the crops are in wonderful shape. I never saw such wheat, oats and potatoes before.

"The people treated us as if we were long-lost sons. They cheered us at every stopping place, and waved their own and our flags as long as they could see us.

The houses are nearly all built of red brick and are in the tenement style. The men seem to like the country and all are keeping well.

"I have never felt better or weighed more in my life than at present—189

pounds."

Corporal H. M. Andersen, formerly of the Electric Distribution Department of Oakland and now in the 185th Aero Squadron, has written an interesting letter from France. He brings a long indictment against that country, and says that he would much rather be back in Eng-

land. The most serious charge presented seems to be that there are no girls to be found in the town where his squadron is located. "We have a nice little hut that is most beautifully camouflaged and a cute little dugout next to it."

The following extracts are from a letter written by Sergeant Eddie Jacobs, 143d F. A., 40th Division. Sergeant Jacobs was formerly employed at Station "C," Oakland:

"Just a few lines to let you know I am just going over again. We are on the dock now waiting to go aboard the transport Vaterland, the largest steamer in



F. W. Newland, U. S. N. R., submarine base, New London, Conn. (Formerly of Fresno District.)

struction and will not see the front line for six weeks. How is Jim and the big gang? Give my best to Station C and B. Please excuse this writing as I am standing up on the dock and my chum is letting me use his back as a writing desk. Say, fellows, there are some thousands of us going over on this boat. Would Bill, the Hun, like to slip us a torpedo—yes?—no? Our battle cry is "Give them hell!"

Mr. Mosher, superintendent of the Steam Department, has received a letter from Harry D. Veirs, Jr., with the 116th Spruce Squadron, Camp 4 E, South Bend, Washington. He is quite sure that the military life is going to "make a man of him yet." He says it agrees with him won-

derfully and he is really coming to like it. "No fooling."

the world. She used to be-

long to the Germans. I was

over there once before and

three days after I landed I was gassed in a scrap at

Ypres. We were rushed in

as reserves. I also got a slight bullet wound in the

shoulder, and with sixty-

five others was rushed back to New York for special

treatment and I am O. K.

now. The gas left me tasteless for three weeks. Sugar and salt tasted the same,

and I cannot smoke again

for at least three months. I am now ordered to a big

French school for final in-

Harry is engaged in real logging operations in the big spruce timber. He speaks of the limited amount of timber that is serviceable for the making of aeroplanes, and says that before long they will have some choice lumber going down the right of way in good shape to do its bit towards whipping the Hun.

A note from A. B. Weeks, Jr., with the United States Naval Reserves at San Pedro, gives the gratifying information that he has made the officers' class and has a fair chance of



L. C. Ferrari, Co. E, 161st U. S. Infantry, A. E. F., France. (Formerly of Electra District.) Has been wounded.

landing a commission. His many friends in Oakland wish him the best of luck and know that he will not fail. He expects to be through the class by January 1st.

Leon J. Mills, who was wounded about three months ago, is still in the hospital at last reports. Mr. Mills was formerly with the Gas Distribution Department of Oakland. He was wounded by shrapnel in six different places: in the foot, in the shoulder and back of the ear, and was rendered unconscious. He was at first taken to Paris, but later removed to a base hospital some 240 miles south of Paris, where the conditions are very favorable and the surroundings most agreeable.

The following letter was received from E. H. Thayer, who is with the 17th Company, 20th Engineers, U. S. A., A. E. F.:

"I have just returned to my company after a leave of absence for ten days and I can assure you that I had a most wonderful trip and time. I spent my leave at Aix-les-Bains, a famous watering place of France, about forty miles from the boundary lines of Italy and Switzerland. It is situated in the mountains and there was a beautiful lake about three miles wide and ten long in which one could go fishing and swimming. On a clear day you see Mt. Blanc from this place. It is a spot very much on the style of Lake Tahoe and I must say it was a paradise, but I can't make Lake Tahoe take a back seat for it has it beaten. However, you can imagine how one of us boys from the land of nowheres must feel to arrive in a place such as I have described and to be escorted to a hotel a la St. Francis and to receive a room and a bath and also to be able to enjoy all the good eats that go with such. Well, such is a fact, for this is what happened to us fellows. I myself cannot believe it, for it was like a dream. To think that a person in the uniform of an American soldier could walk into such a paradise and receive the fine treatment we did at the hands of Uncle Sam, the Y. M. C. A. workers and the French people. It was quite sufficient to make me feel proud that I was over here, and I want to state that Uncle Sam certainly did his utmost for his boys when he sent them to this beautiful spot for a rest with all their expenses paid, and the French could not do too much to entertain us. They were on the job night and day. Here comes the sad part, our day to leave arrived and we had to return to the "tall and uncut" and our companies. It was hard to take, but as we all enlisted to lick the Hun we were satisfied to return to our duties, and I can assure you that after being with a bunch of boys from the time of the wreck of the Tuscania to the present day it was like returning home to your own. We are at it, hammer and tongs, and night and day, and the Boche are on the run backwards. We all hope the good work keeps up, for the sooner old Kaiser Bill and his crowd holler quits the sooner we return to the U. S. and dear sunny California. France is a great country and I can say since our landing in Ireland after our sad disaster that I have seen nothing to beat our Golden State yet."

Word has been received of the death of two of our "Pacific Service" boys while in the service of the United States: Harold Dunton, formerly employed as a draughtsman in the Engineering Department, and Gail W. Barry, a journeyman in the Gas Distribution Department.

Harold Dunton enlisted in the Aviation Corps in August, 1917. He was sent to Kelly Field, Texas, but was later transferred to St. Paul's Technical Training School at St. Paul, where he soon became chief draughtsman, and was expecting his commission in the army very shortly. His death was due to bronchial pneumonia.

Gail Weber Barry enlisted at the beginning of the war. He was sent to Fort McDowell but was rejected on account of an injury to his knee sustained while in the employ of the company. In July of this year he was accepted by the Berkeley board and sent to Camp Lewis. Again he was given the privilege of withdrawing from the army, but declined to do so and was allowed to enlist in the Signal Corps, which he did in September. He passed away on October 4th from an attack of bronchial pneumonia.

"Pacific Service" honors the memory of these brave boys who made the supreme sacrifice for the cause of democracy just as much as if they had given up their lives on the battlefield. We mourn their passing and extend our deepest sympathy to their bereaved relatives.

Captain Albert R. Thompson

THE COMPANY'S SECOND GOLD STAR
AN APPRECIATION

Upon October 12th there came to the writer the startling news that Captain Albert R. Thompson had met his death in France through an automobile accident, which occurred upon September 17th, and that this had been confirmed officially from Washington. No details were given

in the letter but these will undoubtedly follow soon.

This is a particularly sad ending to a career which promised to be bright, not only as to his chosen profession but in the military venture he was so enthusiastic about and which he entered through his high sense of patriotic duty. When the Government issued calls for volunteers Mr. Thompson was one of the first to respond, although but a few months were to elapse before the precludingage limit. When called in December, 1917, he was sent to the Reserve Officers' Training Camp at

Camp Lee, Virginia, where, as was to be expected, he ranked high on the list of fifty who were graduated; 900 started in camp and about 450 were left to take the examinations.

He received a captain's commission and was sent to Camp Devens, Mass., to serve with the Twenty-ninth Engineers. From there he was sent to France in July last.

Captain Thompson was born forty-one years ago in Rehoboth, Del., one of a large family. Some of the members still reside at Lewes, Del., a town nearby. His early life was varied as to school and employment. He received his academical degree from the University of New York, and, with his natural ambition, he sought to improve his condition and subsequently studied law and was admitted to the bar

in New York State. Finding this not to his liking he took up electrical engineering, finally finding employment with the New York Edison Company's forces, from which in August, 1910, he was asked by Mr. Lisberger to come to our San Francisco District as Engineer of Electric Dis-

tribution. There he served until January 1st of this year, at which time he entered the service of the United States.

He was a bachelor. He made his home in San Francisco at the Elks' He was the Club. first chairman of "Pacific Service" section of the National Electric Light Association. Before coming to San Francisco he was president of the New York Edison Company's Employees' Association, a large institution. The advantages of social aggregations of men seemed to appeal to him very much, for he was always upon committees of our

"Pacific Service" Employees' Association, and, in addition, he suggested and formed an organized group of about a hundred of his own men who met for mutual assistance and study for some time in rooms in the Pacific Building. He also took an interest in rifle shooting and duck hunting, belonging to clubs identified

hunting, belonging to clubs identified with those sports.

Captain Thompson was of a very earnest type. He had a high sense of honor and trusted and treated his employees with the kindness that would naturally emanate from a man of such excellent attributes. His untimely taking off is truly to be regretted both by his friends and by his country, for whom he gave his life no less than if he had been killed in battle.

C. L. B.



"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF OCTOBER 15th, 1918 **Total Number**

BOARD OF DIRECTORS—SAN FRANCISCO Livermore, Capt. Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Baugh, Sergt. Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Jesse Wilhert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton

RAL OFFICES—SAN FRAI
Gray, E. L.
Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindblad, Wm. Nathone
Lindstrom, W. J.
McDemott. Louis Wm.
McDonald, Hayward C.
Mel, Lieut. Washington B.
Mensing, M. B.
Monroe, Lieut. Robert A.
Murphy, Lieut. Elmo Neil
Nordling, Wm.
Lia while on active duty in F

Osborn, Lieut. Norris W. Parker Charles G. Regan, Arthur Rossiter, Sidney Benjamin Rossiter, Sidney Benjamin Rubenstein, Frank Sam Schuster, Lieut. John C. Shaw, S. B. Smith, Cyrus Newell Spinetti, John V. Stevenson, Lieut. Richard H. Sultan, Lieut. Walter D. Terhell, Sergt. Jacques Thomas, G. M. Trudrung, Harry Watson, John Wilkins, R. *Wilhelm, Clarence Williams. Lieut. Leroy C. Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France. January 23d, 1918. †Died of pneumonia in St. Paul, Minn., October 14th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Corpl. Harold M. Barr, John Milton Anderson, Corpl. Harold M
Barr, John Milton
Barrett. George
Bates, Byron M.
Belford, William
Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cormack, Douglas Leslie
Currier, J.
Deuschle, Fred W.
Duceo, Daniel
Dupuoy, Max
Erickson, William
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D. Gay, Earl D. Hansen, Sergt. Hans J.

LAMEDA COUNTY DIS
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hughes, William C.
Hunt, Lieut. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Sergt. Ivor
Klinefelter, Sam
Knopla, Charles
Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt. George L.
Maslin, Lieut. Francis I.
Massoni, Dante
McKenzie, Malcolm M.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, George A.
Nelson, Norcal
Oswald, James
CHIGO DISTRICT

Parsons, James Perkins, Erwin S. Pershing, Orton Lewis Pilcovich, Vincent Pershing, Orton Lewis Pilcovich, Vincent Prefontaine, George J. Price, Chalmers G. Proto, Charles Pullen, Corpl. R. A. Rowe, Sergt. John M. Sabel, Alhert Sanborn, Wilfred M. Sandoval, Horace Earl Shuman, D. L. Sibbett, J. E., Jr. Silvestro, Paul Skoglund, Elmer Smith, Stuart N. Southerland, Frederick J. Stephens, Alden Raymond Thompson, Clark C. Veirs, Harry D. Jr. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

CHICO DISTRICT

Curtis, Ray E.

Truitt, James O.

Andrews, Crist C. Broyles, George R. Hale, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Dusenberry, H. H. Hinds, Perry Mare

Allen, Robert Grover Altpeter, Chas. E. Beaumont, Floyd Burton Boyd, William Thomas Compton, John A.

COLGATE DISTRICT Hunt, Edward C. Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

CONTRA COSTA DISTRICT Knight, Lieut. Remi Ghabot Matheron, Frank Mellerup, Fred H.

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Gecil Marlowe, Thomas A. McGuffin, Alfred L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Mess, Lieut. Charles T. Netherton, Raymoud Wayne Royster, Sergt. Joseph A.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W.

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James. Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Burkleo, Dan Butterworth, William Z. Devlin, John A., Jr. Downing, Robert W. Gomes, Carl

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J.

Gash, Lieut. Frank Taylor

DRUM DISTRICT

Johnson, Samuel T. Lohse, Lieut. Marcel P.

ELECTRA DISTRICT

Kimball, Oliver M. Aimbail, Oliver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Maze, Norman E. Nair, Harold Newland, Fred Walton Patterson, A. Earl

MARIN DISTRICT

Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

Duane, Charles
De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Joseph Philip
Holdridge, H. Earl
Holmgren, J. E.

Hubbard, Sergt. H. W.
Johnson, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

NAPA DISTRICT Osborne, Lieut. Butler J. Mayfield, James M.

Snow, Wilbur Roland

NEVADA DISTRICT

Snell, Verne C. Beloud, Leon C. Earl, George Richards, James

PETALUMA DISTRICT

Beveridge, James

Fairchilds, John H.

PLACER DISTRICT

REDWOOD DISTRICT

Leary, Jerry

Kent, James Cody

Boulware, Wm. F. Bryggman, Emil W. Budalich, Oialy A. Caussou, Jean Casey, T. Chase, Corpl. H. A Clausen, J. J. Cullen, John P.

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Busses, George D.
Cameron, John

Beeler, Joseph J. Black, Marion Derr, Harvey

Barriere, Ernest

rens, Frank Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Rowers, Sergt Harold S.
Francouer, Raymond J.

Collins, Geo. Washington Fitzgerald, Paul

Deloy, H. Fulton, Lieut. L. J. Haaker, Frank Haaker, G. V. Harcourt, J. R. Hiestand, C. R. Hocking, Thomas J. Hoffman, Andrew P. Jennings, Edward J.
Johnson, Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Lundquist, Leonard L. Mengel, Henry

SACRAMENTO DISTRICT

Coyle, William Doyle Crandall, Geo. H. Daigle, John M. Dick, Silas S. France, Fred Rhodes Hochderffer, W. E. Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan Raymond M. Logan, Raymond M.

Mathews, Maurice L. Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Newingston, David
O'Connor, Edward T.
Olsen, Albert
Raymond, Harold A.
Richeson, Merle C.
Riggles, R. F.

SACRAMENTO SUPPLY DISTRICT

Dyer, John B. Jones, Verne H. Kinz, William J.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT Carew, Corpl. Clement J.

> BOOKKEEPING DEPARTMENT Gibney, Walter Haiden, Walter Internan, R. Jacobsen, Earl D.

COLLECTION DEPARTMENT O'Connor, Charles A. Oliver, Adrian Pierce

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Ryan, R. Ryan, R.
Stearns, O. J.
Stearns, Ray
Storm, Sergt. Walter E.
Thunberg, Frank W.
Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William

Taylor, Albert P. Taylor, Lieut. Cary P.

Sutcliffe, Lieut. Harold T

Peers, G. A.
Raynard, Duncan
Sampson, L. E.
Sebben, J. E.
Smith, Corpl. R. F.
Strofeld. George
Thane, Alexander
Liblepherg, Louis H. Uhlenberg, Louis H.

Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
Suggett, Archie Dean

Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Keating, Arthur Edward Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E.

Shea, Cornelius Thomas Sheehan, Peter Burnett

SAN FRANCISCO DISTRICT—Concluded.

COMMERCIAL DEPARTMENT

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Garthorne, Sergt, George E. Horsey, Lieut. Joseph H. Leary, James E.

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

ELECTRICAL DEPARTMENT

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Lieut. Guy A.
Beatie, Gerald
Biehl, Lieut. P. F.
Boccignone, Dominico
Brady George B.
Rady George B. Boccignone, Dominico Brady, George B. Burnett, Walter Butler, Sergt. Harry E. Campbell, Sergt. M. F. Clark, Lyle G. Cook, Frank L. Cook, Joseph Crompton, Walter James Daley, Lieut. Robert Davidson, David Dodge, Chas. P. Donovan, Patrick Drew, Harold Durand, Milton J. ELECTRICAL DE
Eichbaum, Sergt. C. W., Jr.
Estes, Sergt. Melville N.
Fogalsang, W. J.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerber, Harold
Griffin, John W.
Hagar, Lieut. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hidlebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Locks, Herman J., Jr.
Madden, Joseph J.

Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Ostrowski, Ray
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F.
Shields, Garrison F.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Lieut. R. D.
Stohler, Adolph
Sundberg, Emil
Sweeney Michael
Szczepanski, Edgar M.
*Thompson, Capt. A. R.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C. Wright, Howard C.

*Killed in an accident in France, September 17th, 1918.

GAS DISTRIBUTION DEPARTMENT

*Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivau, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

GAS MANUFACTURING DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Hanley, Leo J.

Ambler, J. R. Black, John Doherty, James

Hallahan, Maurice

RECORDS DEPARTMENT

McDonald, Wm. John

Hughes, Percy Anthony

Abercrombe, Corpl. Donald Andresen, Carl Clark, Richard Clark, William

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John

Lang, R. T. McNab, Hugh D. Merlinjones, Clarence Newman, Ray J.

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L.

SAN JOAQUIN DISTRICT

SAN FRANCISCO SUPPLY DISTRICT

Faight, Corpl. Forrest W. Flint, Sergt. Arthur P.

Hunt, Lieut. Herbert Tevis Martin, Lieut. David G. McIsaac, Dan Olsen, Melvin L. Riley, Norman Sidney Young, C. Cuyler

SAN JOSE DISTRICT

Bailey, Sidney F.
Bigger, Clyde A.
Billard, Wm. F.
Branch, Ira H.
Brewer, Lyman E.
Brown, Henry Edward
Burns, Lec
Caldwell, Lieut. Edward F.
Candello, Lorenzo
Carroll, Louis

Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Coyle, Dan K.
Danforth, E. A.
Erbentraut, Edwin Otis
Faulkner, Chas. C.
Fiman, Edward F.
Frederickson, J. C.
Frier, George S.
Hale, Lieut. C. St. John

Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Johnson, Lieut. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J. Riesen, Alvin

Rowe, Sergt. Ernest W.
Roy, Harvey Leon
Singleton, Paul
Sprung, Sergt. Stanley W
Stojanovich, Tony
Suess, Walter R.
Tarp, James P.
Terry, R. H.
Wright, Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B. Harris, Eli Raymond Ross, Mervyn F.

Short, Ralph C.

Anderson, Sergt. Frederick E. Mix, Francis L.

SOLANO DISTRICT

Moore, George R.

Morgan, Mervin E.

VALLEJO DISTRICT Argabrite, Lieut. Walter M.

YOLO DISTRICT

Bischoff, O. E. Boots, Benjamin Grandquist, K.

Howard, Everett J.

THE FOLLOWING EMPLOYEES HAVE ENLISTED BUT HAVE NOT AS YET BEEN CALLED TO THE COLORS

DISTRICT NAME . Walker, Alec. MARYSVILLE

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

E present below preliminary income account statements, in condensed form, for the month of September, 1918, for the nine months ended September 30th, 1918, and for the twelve months ended September 30th, 1918, contrasted with the same periods of the preceding year.

PRELIMINARY INCOME ACCOUNT

MONTH OF SEPTEMBER

	1918	1917	Increase	DECREASE
Gross Operating Revenue	1,965,619.58 1,349,820.69	1,696,828.54 1,110,506.02	268,791.04 239,314.67	
Net Earnings from Operation	\$ 615,798.89	\$ 586,322.52	\$ 29,476.37	
ADD Profits on Merchandise Sales and other Miscellaneous Income	45,920.76	41,057.18	\$ 4,863.58	
Total Net Income	\$ 661,719.65	\$ 627,379.70	\$ 34,339.95	
DEDUCTIONS: Bond and other Interest	342,083.51 15,426.41 124,473.02	345,812.92 15,426.41 123,937.31	535.71	\$ 3,729.41
Total Deductions	\$ 481,982.94 179,736.71	485,176.64 142,203.06	37,533.65	\$ 3,193.70

NINE MONTHS ENDED SEPTEMBER 30TH

	1918	1917	Increase	DECREASE
Gross Operating Revenue.		\$14,677,224.32	\$1,824,929.98	
Expenses, including Taxes, Reserves for Depreciation, etc		9,293,698.69	1,765,788.04	
Net Earnings from Operation	\$ 5,442,667.57	\$ 5,383,525.63	\$ 59,141.94	
ADD Profits on Merchandise Sales and other Miscellaneous Income		393,746.13		\$ 26,629.36
Total Net Income	\$ 5,809,784.34	\$ 5,777,271.76	\$ 32,512.58	
DEDUCTIONS: Bond and other Interest	\$ 3,092,138.96 138,837.69 1,118,308.98	138,771.28	66.41	
Total DeductionsBalance				

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED SEPTEMBER 30TH

	1918	1917	Increase	DECREASE
Gross Operating Revenue		\$ 19,501,093.90		
preciation, etc	14,620,478.75	12,063,346.97	2,557,131.78	• • • • • • • • • • • • • • • • • • • •
Net Earnings from Operation	\$7,017,832.17	\$7,437,746.93		\$ 419,914.76
Add Profits on Merchandise Sales and other Miscellaneous Income		574,292.55		92,574.76
Total Net Income	\$7,499,549.96	\$8,012,039.48		\$ 512,489.52
DEDUCTIONS: Bond and other InterestApportionment Bond Discount and Expense Accrued Dividends on Preferred Stocks	185,116.92	\$4,001,847.34 182,072.81 1,451,153.19	\$ 123,899.86 3,044.11 39,071.20	
Total Deductions	\$5,801,088.51	\$5,635,073.34	\$ 166,015.17	
Balance	\$1,698,461.45	\$2,376,966.14		\$ 678,504.69

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF SEPTEMBER 30TH

September 30th	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	116,289	51,145	5,494		172,928
1908	127,345	59,025	5,745		192,115
1909	135,120	67,028	6,326		208,474
1910	147,388	79,933	6,676		233,997
1911	161,251	95,514	7,208	34	264,007
1912	190,458	112,079	7,893	185	310,615
1913	203,588	126,554	8,361	252	338,755
1914	216,016	143,134	9,035	313	368,498
1915	226,502	161,441	9,498	362	397,803
1916	229,480	174,422	9,984	390	414,276
1917	239,290	188,950	12,456	427	441,123
1918	250,879	205,333	13,073	447	469,732
in in 11 years	134,590	154,188	7,579	447	296,804

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month

Year's	subscription															. 8	\$1.50
Single	copy	 	 •		•	٠.	•	•	٠.	•	•	•	•	•		•	.15

Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

OCTOBER, 1918

No. 5

EDITORIAL

Our Mr. John A. Britton's plea for a constructive water-power policy, the full text of which was published in the August number of Pacific Service Magazine and which, besides, has been given wide publicity throughout the country, receives editorial consideration in the current issue of *Public Service*.

This periodical, whose purpose it is to publish the plain facts about public utilities both privately and governmentally owned, takes up the points made by Mr. Britton and draws from them the inevitable conclusion that if the natural resources of the country are to be made available for enabling Uncle Sam to render his promised assistance to the allied nations, not only in the active prosecution of the war to a successful issue but, also, in the work of reconstruction abroad and development at home which must necessarily follow, a more liberal policy than has obtained heretofore must be pursued by those in authority toward public enterprise undertaken and carried through by private capital.

Public Service takes the position that our wonderful resources have been overconserved; this, perhaps, is no new thought, but it is worthy of emphatic repetition at the present time. The general lack of progress in the western states as compared with that in the East is dwelt upon, and over-regulation at the hands of local authorities is given as the cause of a situation which some of the biggest minds in this section of the country are endeavoring to have altered. To quote:

"Most of these western states are veritable kingdoms of potential wealth, empires of undeveloped mineral, agricultural and industrial resources and possibilities; but they must have money, and that in abundance, to develop these resources. They must not surrender any undue advantages to money; the spirit of the times neither requires nor warrants that. But they must treat money fairly."

Out here on the Pacific Coast the fuel conservation problem has brought about an understanding of the power situation to a degree which, up to the present, has been possessed only by those immediately interested in the power in-The threatened shortage coal and oil is undoubtedly responsible for a recently awakened appreciation of the possibilities that lie in the white waters of the Sierra Nevada and companion mountain ranges. This fuel conservation problem was discussed at a recent gathering in San Francisco of leading engineers, at which the United States Fuel Administrator for California joined with the other speakers in expressions of opinion that called for immediate action to relieve the power situation and encourage development for the common As was observed by Mr. D. M. Folsom of the United States Fuel Administration:

"Intelligent conservation means intelligent use, not the crippling of production facilities."

There are two bills now before Congress, each of which has passed one house of the national legislature, which aim to deal with the water-power situation throughout the country. One is a measure providing terms and conditions upon which water-power sites may be developed on public lands and on navigable streams, the other is an emergency measure providing for financial assistance to be rendered by the Government to such power enterprises whose immediate development the Government shall feel to be advisable or necessary under existing conditions; a war emergency measure, in fact. Definite action may not be taken on either of these measures for some little time; but it is earnestly hoped, even expected, that now at last Congress will see its way to remedy conditions that have brought water-power development in this country upon anything like an extensive scale almost to a standstill.

While matters rest in an uncertain state, we welcome the note of encouragement that has been sounded by one armed with authority from the United States Government to investigate conditions in the West and report to headquarters his best advice in the interest of the commonwealth at large. Major George F. Sever, representing the War Industries Board, Power Section, has been a visitor here for several weeks, journeying hither and thither, examining physical, financial and other conditions affecting the power companies of the Pacific Coast, with a view of determining, as he himself has publicly stated, what can be done by the power companies toward winning the war, in the first place, and, when that has been accomplished, taking care of the reconstruction period. Major Sever spoke at the fuel conservation meeting just referred to and there he announced his surprise at learning that not a single kilowatt had been added to any of the hydroelectric systems in California during the past year. The result of this discovery, he said, had been a strong letter written by him to Washington in which he had not hesitated to comment adversely on the governmental policy of restriction.

Major Sever found, as the result of his investigation, that the main reason for the power shortage in California was the inability of the companies to develop their resources, owing to conditions that had obtained for a number of years. couldn't get the money, in other words. He proposed to remedy that if he could, and having ascertained according to his best judgment what immediate developments might be perfected with the necessary financial assistance, he had recommended those to the Federal Government. In the course of his investigation he had found much potential development of a high character that might be cared for in some future program, but he was immediately concerned with those developments whose construction within a reasonably short period would enable them to be of use to the nation within the period estimated for the complete winding up of affairs abroad.

Major Sever's recommendations are now in the hands of the authorities at Washington and we are awaiting the result. Not all of the "immediate" developments, so called, which are upon the Major's program will require financial assistance from the Government, and we point with pride to his announcement that so far as two of these are concerned. namely, the proposed additions to the storage capacity of Lakes Fordyce and Spaulding, our company is in a position to undertake the necessary construction work and pay the cost out of earnings. But others will have to be financed, and if Major Sever's suggestions find favor at the national capital they may be imposed as a joint burden upon the War and Navy Departments and the Emergency Fleet Corporation.

Meanwhile we are thankful to be able to record that nature has come to the relief, temporarily at least, of the power companies of California who have been unable to distribute to their consumers even the normal supply of peace times owing to the phenomenally long spell of dry weather that reduced their water storage facilities to an alarming extent.

It is officially announced that the recent rains have supplied the power companies with sufficient water to relieve the power shortage which has existed for the past several months, and the Power Administrator appointed by the Railroad Commission has issued an order, effective October 14, 1918, canceling orders hereissued by him, removing all restrictions from the use of electrical energy for advertisements, notices, signs, exterior illumination or ornamentation of buildings, show windows, lights in the interior of stores and offices, street lighting, etc. After October 14th, therefore, all restrictions on the use of electrical energy by the Power Administration will have been removed, except orders issued restricting the use of electrical energy by breweries.

The Fuel Administrator's order restricting the use of electrical energy for street lights, signs, etc., will, however, still be in force. These restrictions of the Fuel Administrator prohibit the use of electrical energy for display advertising, announcements, signs, show windows, or exterior illumination of buildings on Monday and Tuesday nights only, and continue to restrict the street lighting to that necessary for safety.

The effect of the above changes will be to permit signs, show windows and such advertising or display advertising to burn five nights of the week now instead of only two nights as has been the case during the past two months.

Tidings From Territorial Districts

Alameda County District

Grasshoppers in wholesale lots have become a commercial proposition as a crop in Colusa County, the principal source being in Arbuckle and Goose valleys, where acres of grapes and meadows

have been devoured by the pests.

This situation attracted the attention of Bill Shuhaw of San Leandro while visiting upon his vacation this summer. Bill, as you know, traces his name back to Shu, one of the deities or families of Egypt, in the days of the Pharaohs. The Pharaohs, we are told, were mixed up with a plague of locusts which went on a strike, jumping the job by millions. So, you see, Bill's family ties are quite strong when it comes to grasshoppers. Bill saw the dull colored, weird looking insects fly from clod to clod of earth. The dull color in flight turned to iridescent as the inside wings fluttered in the glowing sun. He thought, if grasshoppers were only clodhoppers, what a pulverizing boon to the farmer, as some good out of evil. This was but a minor thought. came the whopping big flight of thought. Why couldn't the hoppers be pickled and canned for fishermen's bait?

He thought of all the "Pacific Service" fish sports: Al. Parratt, Smithy, Cowell, Cohick, Maddocks, etc., etc.; how they would fall for the bait and bite at a chance to buy stock in the concern! He conceived the building of a mosquito bar contrivance in the shape of a funnel, with the wide opening ten feet in diameter. This would be placed on a sled close to the ground and pushed ahead by a yoke of oxen hitched up behind. The oxen would switch their tails and scare back escaping hoppers. This funnel-like contrivance would trap the insects just as quail are netted by unlawful hunters who come back and tell us about pot shots. However, there will be some preliminary work. It will first be necessary to call upon the boys in the engineer's department to figure out on the slide rule how much saltpeter will be required to saturate a gallon of water. The grasshoppers will be pickled in twenty-four-gallon cans and shipped to Oakland, where they will be recanned later in small cans suitable

to supply the bait wants of an average fisherman. The sport will buy cans by the dozen as an indication of the fish he would have you think he is accustomed to catch.

See how it listens: "Pickled Hoppers. Latest Rivals for Early Worms. Canned for Fishermen's Bait."

OAKLAND SHIPBUILDING FACTS.

Ships.	Tons.
Moore Shipbuilding Co40	380,000
Union Construction Co10	94,000
Hanlon Drydocks Co14	73,000
Bethlehem Shipbuilding Co29	300,000
Liberty Shipyards20	300,000
Concrete.	

S. F. Shipbuilding Co...... 8 60,000

This great building program of 121 cargo carriers and troop ships is now approaching full swing. The total cost of this magnificent fleet will be over \$238,000,000. When all plants are in full operation some 70,000 men will be employed; a population to make a city by itself.

This is not a temporary flurry. America is to assume the marine commerce of the world. Ships will continue to be built to maintain the great ocean highways, and then there must be shipways for repairs. Our majestic bay is destined to be the great shipbuilding center of the world because of safe harbor conditions and climate to permit work the year around. There are no freezing conditions in winter or oppressive heats of summer. Labor can work at its highest efficiency. Then the cost of power is remarkably low. Already these plants are using electric energy in horsepower by the thousand and gas by the million cubic feet. Great ships are taking form in the shipways.

For the first time since the Government took over the Government Island in Brooklyn Basin, the public was received by the designers of the plant and Federal authorities on Saturday, September 28th, in honor of the dedication of that yard for shipbuilding purposes.

Many residents of the East Bay territory availed themselves of the only op-

portunity they will have to visit the new concrete shipyard, and amid cheers of the thousand present little Gladys Thebo, daughter of Superintendent F. Thebo, unfurled the American standard from the yard flagstaff, and on behalf of the American people formally dedicated for public use the latest of Uncle Sam's industries.

Like all of "Uncle's" work, the yard will reach the highest of perfection and efficiency. There are four shipways to accommodate the pouring of concrete into four hulls at one time. In connection with the plant a cafeteria will be run for the benefit of workmen. "Ideal surroundings" is the watchword of the designers of the plant.

The Gas Distributing Department in Alameda County District has just completed the laying of a three-inch main on Dennison Street from Twenty-third Avenue to the water's edge. Gas will be delivered on the island by high pressure reduced by means of No. 4 Equitable regulator and metered by type 60-A meter.

Besides the work on public highway, the Alameda County District was awarded a contract by the Government for piping grounds to various points of use—hospital, cafeteria, timekeeper's office, general office, paint shop, pipe shop, etc.

Speed has beaten all records. Ships are ready for service within 100 days after keel laying. On the nation's last birthday, July 4th, Washington received no less than nine telegrams, and these twenty minutes apart, each announcing the launching of a vessel in Oakland harbor.

On Saturday, October 5th, in the presence of city officials, Federal authorities and thousands of interested spectators, the new shipbuilding plant of the Union Construction Company on Oakland's western waterfront was put into motion by official driving of rivets, official speechmaking and everything which goes to make such an occasion official.

The gas industry has considerable to do with making things official nowadays. The rivets which were driven in the keel of vessels started on that day were heated with gas. To provide the supply demanded for such an industry at that remote point a special 8-inch high-pressure

main was built from the compressor station to the new plant, a distance of three miles. This line cost \$28,000. Equitable balance valve regulators will reduce the pressure on the line and four type 150-A meters will meter the gas delivered.

Jim Gallagher says some people ask you foolish questions as if those were the only kind you could answer.

The Employees' Association is planning to provide an attractive lunch and rest room for the girls in the main building, Thirteenth and Clay. The committee in charge is Misses Pearl Sturm, L. D. Wood, Gladys Cummings, M. J. Adamson and Mrs. Maude Parsons.

It is said that Charlie Cowell and Charlie Young are so much alike that they often borrow money from each other without knowing it. Besides having the same first name they both have the same young look. Charlie Young told Charlie Cowell that Aberdeen pine tree gum will grow hair on a bald head, yet Charlie Cowell won't believe it. This is the only difference between them.

Esther Burman says on her vacation she became a regular farmerette, and the freckles she brought back are sure service stars.

A. Communique.

Sacramento District

The State Railroad Commission has been asked by the company to investigate the fares charged on the street railway system in Sacramento, and to make new rates that will net a fair return upon its investment. The fare is now five cents, which, under the increasing cost of labor and materials, is not sufficient to enable the company to operate the system at a fair profit. The hearing was begun before the commission on October 3d.

Petaluma District

Miss Loretta Horwege, for ten years a member of the office staff of the Petaluma District, left to accept a position in San Francisco. On leaving she was presented with a beautiful pin by Manager Weber on behalf of himself and the other fellow workers of Miss Horwege as a token of the high esteem in which they held her and their regret at her departure.

Marin District

Miss Margaret Burtschael of San Rafael has been appointed local agent for the Pacific Gas and Electric Company at Sausalito to take the place of E. V. Baraty, who has resigned.

Contra Costa District

J. C. Hitchcock has succeeded F. J. Southerland as agent in the company's office at Richmond. Mr. Southerland has enlisted in the air service, Aviation Department, and left for the Army Balloon School at Fort Omaha, Neb., to train for a commission in the flying service.

Mr. Hitchcock has been employed by the company for a number of years as foreman of construction in the Contra Costa District, previous to which he was employed in Oakland and Grass Valley.

Vallejo District

Down at the gas plant (as we call it) on Maryland Street the company is putting up two 100-horsepower boilers to handle the ever-increasing service that is now coming to Vallejo.

The company's old Austin ditch digger, under the supervision of George Hold, is sure digging some trenches out in the Government home site. The old digger looks a little wobbly, but it gets there, and scores of people have been watching it work. Some remarked that it might be a tank from "over there."

The "Pacific Service" Club has formed a gun club, and as the duck season is now at hand they have rented the Mini ponds just north of town and all expect the limit on opening day.

Mr. Hauhuth and associates who were drilling a well in the northeastern part of town in expectation of striking oil have ceased operations and are trying to make arrangements with the company to dispose of the natural gas which has been found there in large quantities. The well is 2,600 feet in depth. A cap was placed on it one night and the next

morning when the plug was removed the gas shot 60 feet in the air. They will try operations on another site as soon as material arrives.

The schools have become so crowded that it has been decided to erect a new \$12,000 school building and make additions to the others.

The "Pacific Service" Club is having a horseshoe tournament, and judging from the excitement and the scores of the games challenges will soon be out.

A. J. STEPHENS.

Fresno District

Walter Johnstone, who has been the cashier in this district for two and a half years, has resigned to take a position with the Pacific Mail Steamship Company at Shanghai, China. We regret losing him, but he goes to his new work with the best wishes of everyone in the district. C. M. Derby replaces Mr. Johnstone as office manager, coming to us from Berkeley and having had extensive experience in public service work in the years past.

On Tuesday, the 8th day of October, gas was turned into the new million-foot holder at the new gas works now under construction. This marks the first step of going into our new home. The occasion to us was quite a momentous one, and rather than christening the holder with champagne it cost Van E. Britton, who had the privilege of putting the first gas into this holder, a subscription for a \$100 Liberty Bond in Fresno city. We expect to formally open the new works on Friday, November 8th.

Recent rains had supposedly done a very great deal of damage to raisins, but reports now from ranchmen and the Raisin Association are to the effect that if we get ten days of warm weather practically the entire crop will be saved, and that in spite of some loss there will be a very heavy crop.

M. L. NEELY.

San Francisco District

The California Packing Corporation has increased the power installation of

its plant, located at Beach and Leavenworth Streets, by 145 horsepower. They are evidently getting the winter's supply of canned goods ready for the boys "over there."

The Spring Valley Water Company is making an installation of 250 horsepower at Twenty-sixth and Shotwell Streets to be used for pumping water from low level at University Mound reservoir to high level at Lake Honda reservoir. This pump will handle about 2,100 gallons per minute, or 3,000,000 gallons per day. George W. Pracy, assistant superintendent of the Spring Valley Water Company, after several conferences with our Spencer Moore, recommended that a contract be signed for the rendering of "Pacific Service." Now watch the water flow.

The Pacific Foundry Company, Eighteenth and Harrison Streets, is still growing, having recently increased its installation by 168½ horsepower. This is one of four plants of its kind in the United States, being chiefly engaged in manufacturing acid-proof metal. Most of its products at the present time are being used by the Government. Its plant No. 1 is engaged in the above production. Its plant No. 2 is engaged in the manufacture of cast iron.

The business of the Goodyear Rubber Company, 63 Natoma Street, is still stretching. (Do you get that?) This plant operates entirely in the manufacture of essential goods, a large part of its production going directly to the Government. They have recently increased their hose factory installation by 43½ horsepower.

The employees of the San Francisco District patriotically did their bit in subscribing to the Fourth Liberty Loan. Up to October 18th the subscriptions amounted to \$65,000, or more than double that subscribed to the Third Liberty Loan. Who says San Francisco doesn't know how? F. S. Gray.

At Station A the use of oxy-acetylene flame to weld leaky tubes in the boilers has resulted in a big saving in the reduction of tube renewal expense. In the month of August a large number of tubes were replaced before the above process was put in use, and in September nearly all of the tubes were repaired by this process.

At the present prices the cost of re-

newing boiler tubes is very expensive. The welding of leaky tubes in this way passes inspection by the boiler insurance companies.

The readings taken on our new 4-pass Stirling boilers at Station A show a marked decrease over the 3-pass Stirlings in the temperature of the escaping flue gas at all ratings, indicating that the economy of the new arrangement is of material advantage.

Work has been started on the rerouting of P. H. cables 9, 11 and 24 over Hamilton Street, Burrows Street and Charter Oak Avenue on a new 50-foot pole line which will eliminate several bad corners in the old line.

The foundation for the new steam turbine at Station A is nearly completed.
S. J. LISBERGER.

Head Offices, San Francisco

In a feature article headed "Gas Company Girls Do War Work," the San Francisco Examiner of September 29th tells of the various activities of the women of our organization:

"When it comes to 'doing its bit' the 'Pacific Service' Red Cross Auxiliary has almost reached the 100 per cent mark. Besides sending one of its members, Miss Letitia Curtis, to France to work for the Red Cross, the young women of this organization, who are employed at the Pacific Gas and Electric Company, have knitted 260 pairs of socks, 105 sweaters and 62 helmets, and have made 62 garments which were turned into the department of civilian relief of the Red Cross.

"The 'Pacific Service' Auxiliary was formed in February with forty members, and there are now one hundred and thirty. Seventy-five of the girls give several nights a week to the work of the Business Women's War Service, as well as knitting and sewing for the Red Cross.

"Six of the members are war brides, having married men in the service since the war began, and one of the members operates an electrical switchboard at Cement, filling a position which was held by her husband until he enlisted. Another member of the Auxiliary is holding down her husband's position in the bookkeeping department until he returns from the war."

The flashlight picture shows what a good time everyone was having at the dance given by the girls of "Pacific Service" to the enlisted men from the Letterman Hospital on Thursday evening, October 3d, at Elks' Hall.

A great deal of credit must be given to Miss Estella Braesch of the Rate Department and Miss Lucy Keane of the Bookkeeping Department, the two girls to whom the idea first occurred and who worked so unceasingly and untiringly to make it a success. They were assisted by Misses Zita O'Connor, Al Dean Shockley and Loretta Vanderwhite as a reception committee and by Miss Jeannette Doub of the Law Department, who presided over the refreshment table. Mrs. L. Van Alstyne was the patroness of the evening.

Elks' Hall was very beautifully decorated for the occasion, with "Old Glory" everywhere, an appropriate background for the uniformed men and the smiling girls, prettily but informally dressed, about seventy-five couples in all. Dancing was enjoyed between the hours of 8:30 and 12, after which ice cream and cake were served to the happy young people. Our own "Pacific Service" Orchestra, under the direction of Louis Melbourne, furnished the dance music in that snappy and enticing way that makes us all so

proud of this feature of "Pacific Service."

Congratulations have been received on all sides, and the fact that the guests of honor have already asked for another dance in the near future is the best evidence that it was the "right idea." The following letter speaks for itself:

> UNITED STATES ARMY, Letterman General Hospital, Presidio of San Francisco.

San Francisco, Cal., October 14, 1918. Dear Miss Braesch:

Photograph received for which please accept my thanks. I assure you it is greatly appreciated. The members of the Letterman Hospital extend their thanks to the employees of the Pacific Gas and Electric Company for the enjoyable evening of the 3d inst.

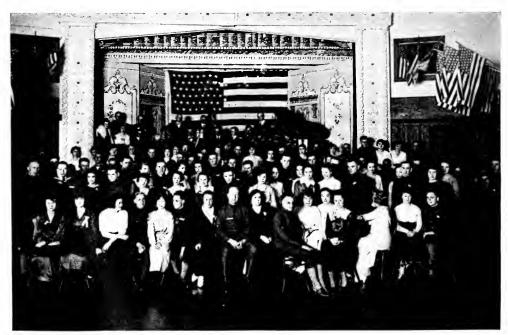
Thanking you again for the favors ex-

tended, I remain,

Sincerely yours,

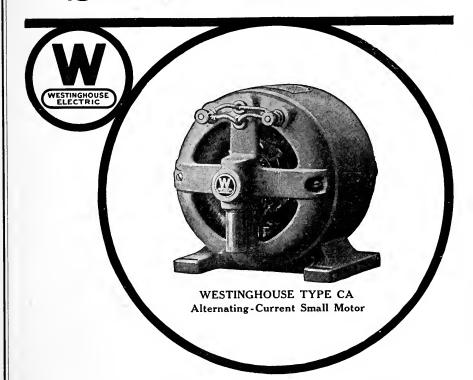
JOHN T. LEONARD,
Sgt. 1st Cl. Med. Dept.

Encouraged by the success of their first attempt, the girls are planning to make of it only the first of a series of such affairs, hoping to be able to entertain the men in the different branches of the service every so often, so that their stay among us will be a bright and happy memory.



Young women employees of "Pacific Service" entertain enlisted men from the Letterman Hospital at a dance.

Westinghouse Small Motors



Our Catalogue No. 38 tells you everything you want to know about a complete line of small motors.

You need this information—it is logically and consecutively arranged in a convenient pamphlet, size $8\frac{1}{2}$ " x 11"—

It tells you:

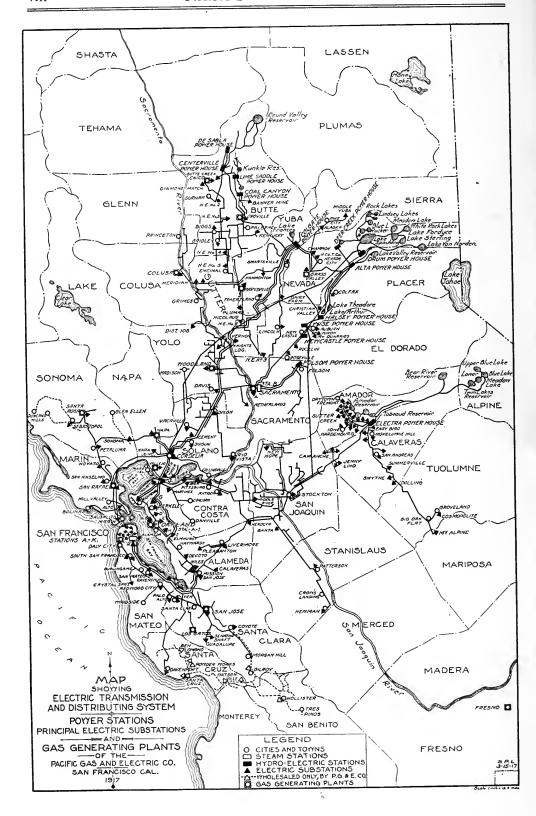
- 1. WHAT THEY LOOK LIKE.
- 2. WHAT THEY DO.
- 3. HOW TO BUY THEM.

Your Salesmen and Engineers can use effectively solving your small-motor problems. It is a reliable handbook for Dealers, Jobbers, Central Stations and Manufacturers.

Westinghouse Electric and Manufacturing Co.

EAST PITTSBURGH, PA.

San Francisco Office, 1 Montgomery Street



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 460,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	INI	DIRECTLY	TOTAL			
	No.	Population	No.	Population	No.	Population		
Electricity	128	1,210,830	48	132,825	176	1,343,655 1,228,292 76,600		
Gas	51	1,219,690	2	8,600	53	1,228,292		
Water (Domestic)	11	57,302	8	19,300	19	76,600		
Railway	1	76,000			1	76,000		

CITIES AND TOWNS SERVED BY COMPANY:

CITIES AND TOWNS SERVED BY COMPANY:													
Place Por	oulation	Place Pop	ulation	Place Po	pulation	Place Po	pulation						
¹Alameda	30,000	El Verano	400	MokelumneHill	300	² San Quentin	2.500						
² Albany	2,300	² Emeryville	3,000	Morgan Hill	750	² San Rafael	6,000						
Alvarado	700	Esparto	250	Mountain View	2,500	Santa Clara	6,000						
Alviso	550	Fairfax	250	Mt. Eden	210	Santa Cruz	13,600						
4-8Amador City	1,100	Fairfield	1,000	²Napa	6.500	Santa Rosa	11.000						
Angel Island	280	Fair Oaks	300	⁴-*Nevada City	2,900	Saratoga	300						
Antioch	2.000	Felton	300	Newark	505	Sausalito	3.000						
Aptos	300	Folsom	2,000	Newcastle	950	*Sebastopol	1.950						
Atherton	250	Forestville	225	Newman	1.200	Shellville	200						
4-*Auburn	2.800	Fresno	48.867	Niles	1.000	Sheridan	250						
Barber	500	Gilrov	2,900	Novato	400	Smartsville	300						
Belmont	375	Glen Ellen	900	*Oakland	225,000	*Soquel	400						
Belvedere	550	4-8Grass Valley	5,200	Oakley	200	Sonoma	1.290						
Benicia	2,400	Gridlev	1.800	Occidental	600	South San	2,270						
Ben Lomond	800	Grimes	350	*Oroville	5,000	Francisco	3,750						
² Berkeley	65.000	Groveland	250	Pacheco	250	2-7Stanford Uni-	5,150						
Biggs	500	Guerneville	780	²-¹Palo Alto	6,000	versity	2,600						
Bolinas	200	Hammonton	500	Paradise	500	4-6Stockton	42,000						
Broderick	600	Havward	4.000	Patterson	500	Suisun	800						
Burlingame	4.000	Hillsborough	950	Penn Grove	300	Sunol	340						
Campbell	700	'Hollister	2,500	*Penryn	250	Sunnvvale	1,650						
*Capitola	275	4-61one	1,000	Perkins	250	Sutter City	250						
Cement	1.000	1rvington	800	²Petaluma	7,500	4-8Sutter Creek	1.300						
Centerville	850	6-8Jackson	2.100	² Piedmont	3,500	Tiburon	350						
2Chico	15,000	² Kentfield	500	Pike City	200	*Tres Pinos	300						
*Colfax	500	Kenwood	200	Pinole	1.800	Vacaville	1.250						
²Colma	1.800	Knights Land-		Pittsburg	6,000	²-6Vallejo	15,500						
²Colusa	2.000	ing	400	Pleasanton	1.500	Wineburg	200						
Concord	850	Larkspur	2,000	Port Costa	1.000	Walnut Creek .	500						
Cordelia	300	5-8Lincoln	1.500	2Redwood City.	4,200	Warm Springs.	200						
Corte Madera.	350	Live Oak	300	1-6Richmond	16,500	Watsonville	6,000						
2-4Cotati	200	*Livermore	2,500	Rio Vista	1.000	Wheatland	500						
Coyote	200	Lomita Park	450	*Rocklin	900	Winters	1.200						
Crockett	3,000	Loomis	450	[¢] Rodeo	300	*Woodland	5,000						
Crow's Landing	300	Los Altos	500	*- *Roseville	4,200	Woodside	225						
Daly City	5,500	Los Gatos	3.000	²Ross	900	Yolo	350						
Danville	400	Madison	250	Sacramento	76,000	² Yuba City	1,750						
Davenport	300	'Mare Island	500	San Andreas	750		.,						
Davis	1.700	Martinez	3,500	² San Anselmo	3,000	-							
Decoto	300	² Marysville	6,000	² San Bruno	1,500	Total Cities							
Dixon	1.200	Mayfield	1,100	² San Francisco	580,000	and Towns1	,422,522						
*Drytown	225	² Menlo Park	1.100	² San Jose	45,000								
Duncan's Mills	200	Meridian	225	San Juan	550	Add Suburban	400 506						
Durham	300	² Millbrae	300	² San Leandro	5,000	Population	400,586						
4-6Dutch Flat	750	Mills	350	² San Lorenzo	400	_							
Eldridge	500	Mill Valley	3,200	San Martin	200								
2_6El Cerrito	1,200	Milpitas	350	² San Mateo	6,000	Total Popula-	000.100						
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,823,108						

Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

Gas, Electricity and Water.
Gas, Elect. and St. Railways.
Electricity and Water.

Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	205,333
Number of Gas Consumers	250,879
Number of Water Consumers	13,073
Number of Steam Consumers	447
Total number of consumers	469.732

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

TVERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments. States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y. Ten Eyck Building Ten Eyck Building
Atlanta, Ga.
Trust Co. of Ga. Bldg.
Baltimore, Md.
Munsey Building
Boston, Mass.
10 State Street
Buffalo, N. Y.
Marine Bank Bldg.
Chicago, Ill.
137 So. La Salle Street
Cincinati, Ohio CINCINNATI, OHIO Fourth Natl. Bank Bldg. CLEVELAND, OHIO Guardian Building

Bonds

DAYTON, OHIO Mutual Home Bldg. Mutual Flome Bidg.
DENVER, COLO.
First National Bank Bldg.
DETROIT, MICH.
147 Griswold St.
HARTFORD, CONN.
Conn. Mutual Bldg.
DETROIT MUTUAL Bldg.
PITTSBURGH, PA.
1421 Chestnut Street
PITTSBURGH, PA.
PITTSB INDIANAPOLIS, IND.
INDIANAPOLIS, IND.
Fletcher Sav. & Trust Bdg.
Fletcher S Los Angeles, Cal. Hibernian Building Minneapolis, Minn. McKnight Building

Newark, N. J. 790 Broad Street PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA. Farmers Bank Bldg.

PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I. .
Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. SAN FRANCISCO, CAL. 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass. Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W

WILKES-BARRE, PA. Miners Bank Building Acceptances

Short Term Notes





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
Henry E. Bothin
John A. Britton
W. H. Crocker
F. G. Drum

John S. Drum F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer JOHN D. McKee JOHN A. McCandless C. O. G. Miller NION R. TUCKER GEORGE K. WEEKS

OFFICERS

F. G. DRUM										President
										Vice-President and General Manager
										Second Vice-President and Treasurer
										. Secretary and Assistant Treasurer
Jos. C. Love										Assistant Treasurer
Chas. L. Barrett .										Assistant Secretary

HEADS OF DEPARTMENTS

D C D								C L. T
F. G. BAUM								Consulting Engineer
W. B. Bosley .								Attorney
								Property Agent
								Manager Claims Department
C. P. Cutten .								Attorney, Rate Department
K. I. Dazey								Manager of Collections
P. M. Downing							С	Shief Engineer Electric Department
E. B. HENLEY .								Manager Land Department
JNO. H. HUNT .								Purchasing Agent
								Engineer Electrical Construction
E. C. Jones								Chief Engineer Gas Department
F. S. Myrtle .								. Manager Publicity Department
L. H. Newbert								Manager Commercial Department
R. R. Reidford								General Auditor
Geo. C. Robb .								Superintendent of Supplies
W. G. VINCENT, J	R.							Valuation Engineer

DISTRICT MANAGERS

DISTRICT	HEADQUARTERS	MANAGER
Alameda County	Oakland	F. A. LEACH, JR.
Снісо		
Colgate	Colgate	Miles Werry
Contra Costa	Martinez	Don C. Ray
DE SABLA	De Sabla	I. B. Adams
Drum		
Electra		
Fresno		
MARIN		
MARYSVILLE		
Napa	Napa	C. D. CLARK
Nevada		
Petaluma	Petaluma	H. Weber
Placer	East Auburn	H. M. Cooper
Redwood	Redwood City	E. W. FLORENCE
Sacramento	Sacramento	C. W. McKillip
San Francisco	San Francisco	Henry Bostwick
San Joaquin	Stockton	J. W. HALL
San Jose	San Jose	J. D. K uster
Santa Rosa	Santa Rosa	M. G. HALL
Solano	Dixon	C. E. Sedgwick
STANISLAUS	Newman	W. A. WIDENMANN
Vallejo	Vallejo	A. J. STEPHENS
Yolo	Woodland	J. W. Coons

Pacific Service Magazine

Volume X



Number 6

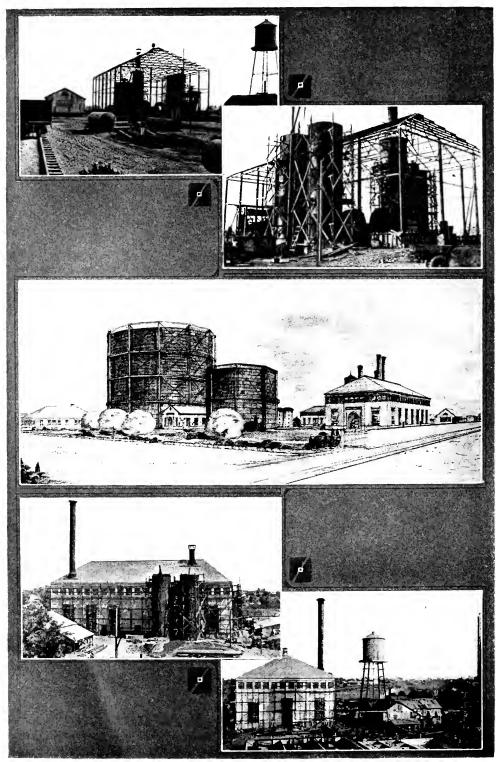
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for November, 1918

VIEWS OF THE LATEST "PACIFIC SERVICE" GAS PLANT	Frontieniaca
OUR NEW GAS WORKS AT FRESNO—"Pacific Service" completes the construction of a plant that will meet the requirements of a community that demands service in keeping with its	Promaspiece
EXPANSION	W.M. Henderson 163
GAS, THE LOGICAL FUEL FOR HOUSE HEATING	H. M. Crawford 170
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION	173
THE STORY OF CAPTAIN K. R. VARNEY .	177
MISS LETITIA A. CURTIS—THE FIRST AMERICAN WOMAN TO CROSS THE FRONTIER INTO GERMANY	178
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A. F. Hockenbeamer 180
EDITORIAL	182
TIDINGS FROM TERRITORIAL DISTRICTS	184
THE "PACIFIC SERVICE" ROLL OF HONOR	190

Index to Advertisers

Allis-Chalmers Mfg. Co. iii Chaplin-Fulton Mfg. Co. v General Electric Co. National City Company 4th page cover Pacific Meter Co. iv	v i r	Sprague Meter Co Standard Underground Cable Co Steiger & Kerr Stove & Foundry Co Welshach Company Western Pipe & Steel Co. of California Westinghouse Fleetric & Mfg. Co.	iv ii iii iv vi
Pacific Meter Co	٧		



The Pacific Gas and Electric Company's new gas works at Fresno, at various stages of construction.

PACIFIC SERVICE MAGAZINE

Volume X

NOVEMBER, 1918

Number 6

Our New Gas Works at Fresno

"Pacific Service" Completes the Construction of a Plant that is Up to Date in Every Particular and Will Meet the Requirements of a Community that Demands Service in Keeping with its Phenomenally Rapid Expansion

By W. M. HENDERSON, Assistant Engineer, Gas Department

THE first venture the gas industry attempted at Fresno was in 1883. At that time the place was a mere village with a rated population of about five thousand people. The price of gas was then \$5.00 per 1000 cubic feet and the consumers numbered about fifty. For a number of years the employees did not exceed three and these took care of the whole system, works, distribution and office.

The site of the works was at Mariposa and F Streets, and the location has served through all these years down to date. Until 1892 the plant was run as a coalgas works and then water-gas apparatus was introduced. In 1903 the Pacific Gas and Electric Company became interested in the property and immediately installed the then new process of producing gas from California crude oil.

About the time the property changed hands, Fresno was entering the first stages of its spectacular development. It then had a population of 15,000 and a daily output of 100,000 cubic feet of gas distributed to 1200 consumers. The growth of the city has been steady and now it ranks as the seventh city in the State, and in

its gas business is holding its own with San Jose and Sacramento. This expansion naturally has had its effect on the plant. At first it was simply a matter of enlargement of the generating plant and storage capacity, with the usual extension of main lines, and in the five years ending 1908 the plant was rebuilt and enlarged to take care of what was thought would be a 20-year demand. During this time the distribution system was added to, just as new business required. The new capital thus expended was small compared with the growth of the business, but it was known to be only a matter of time when the distribution system would require a complete reconstruction.

With the development of outside territory, the high-pressure transmission of gas was introduced. This took care of the problem till about 1910, at which time new low-pressure trunk mains were necessary to maintain service. From this time to date additions and replacements on the distribution system have been a continuous performance. The result of all this work and expenditure has borne fruit, for Fresno now enjoys the best of service, in return for which the company is well patronized. The best evidence of this fact is illustrated by figures for the past ten years:

1918—Number of consumers, 3297;



Site of the new gas works at Fresno. An 8-acre farm in the northwest section of town.



Breaking ground for the works, September 3, 1917.

miles main, 36; daily output, 600,000. 1918—Number of consumers, 8298; miles main, 108; daily output, 1,300,000.

In 1916 it was recognized that the resources of the generating plant would not take care of the constant demand and consistent growth of the city. The site of the works did not lend itself to further expansion, all the development possible having been made within its bounds. Property values were steadily rising in the neighborhood, and adjoining land that was essential to growth was improved with permanent buildings. So now a study was made of the situation with a view of adopting some definite policy for the future.

The United States had not at this time entered the war, so the material and labor situation was not so serious as it later developed. In view of this it was not so difficult to properly plan a solution of the problem. The gas works as it existed in 1916 required additions or enlargements in the main units that go to make up a plant, that is, a new gas generator, new purifiers, boilers, storage holder, oil tank and additional ground or

yard room and necessary buildings. All this would represent an expenditure estimated at \$400,000, and when completed it would be but a reconstructed gas works, this because the available ground room was so limited that any new construction would have to be installed where room permitted and not in the location that placed it to

proper advantage. The capacity of the plant had been reached, so far as generators and boilers were concerned, and thus none of the existing equipment could be removed to make room for the larger units. In fact, the solution of the difficulty was very plain, but drastic.

Finally it was decided not to attempt to add to the existing gas works but to select a new site

and lay out a new works. In the construction of this it was proposed to move from the old plant such auxiliary equipment as was useful and of sufficient size to warrant moving.

The city of Fresno, it was observed, tended to expand in a northerly direction, so it was in this direction that a location was sought so as to keep the lines of communication between production and consumption as short as possible. Fresno lies a-straddle of the Southern Pacific tracks; to the east is the residence and commercial business section, while the west is given over to factories, packing houses and industries. The northwest portion of the city was decided on as the proper location, establishing the plant on the side of the industries while, at the same time, keeping it in touch with the growth of the residence section.

There was no particular advantage to be gained by staying within the city limits, other than the privilege of using the city sewer system for the works overflow. As this was of little consequence it was not considered, so that



Fill for generator floor, three feet above ground line.

there was quite a broad territory to select from. Fresno is situated in a level plain which gradually falls northwest, and that section of town is the low spot, the proper site for a gas works. The irrigation canal and Dry Creek both flow in this direction, a circumstance which would solve the question of water supply and disposal of waste water. Another advantage of this site

worthy of note and given consideration was the fact that the prevailing winds which are usually northeast would blow over the works away from the town.

The final selection was an 8-acre piece lying along the west branch of the Southern Pacific Railroad and next to the oil pumping station of the Associated Pipe Line Company. This is an ideal site, as it has the double advantage of rail connections and the opportunity of direct supply of oil from the pumping station of the oil company. This meant a good deal, for oil is the first essential in gas production, and for a works the size of that planned for Fresno to depend upon tank cars has at times proved quite a opportunity hazard. So, when the offered itself to connect up direct with the source of supply it was an advantage that was worthy of acceptance. The only problem this site left on our hands was the disposal of waste water, a minor difficulty, however, for it presented an opportunity to adopt the method of using over the water required in washing and scrubbing the gas.

The property was originally a farm



Bolting up bottom of Generator No. 1.



Foundations for generators and scrubbers.

containing a few acres of grape vines and about four acres of peach trees; the balance was farmed for hay. An excellent cottage was located on the front portion, which was later used as quarters for the men during construction. Around the house were various fruit trees and many ornamental shade trees. These were all respected in laying out the new works, and it was rather fortunate that the clear ground was best suited for the location of the main structures. In this way much of the orchard has been saved.

Throughout Fresno the subsoil is ideal for foundations, and this held true at the new works. Hardpan was found to lie the deepest not over six feet from the ground line. Tests of the bearing power showed it to be capable of supporting 6000 pounds per square foot without any observed depression. The surface soil was all honeycomb gravel and loam, easy to excavate. Thus design and installation of foundations proved very simple.

The works was planned with a view of taking care of growth of the territory for years to come, by making provision for future additions or expansion. The

capacity of the plant as now erected is nominally 2,000,000 cubic feet per day; this is 50 per cent in excess of the maximum day's output so far recorded at Fresno. As the plant is complete with duplicate units throughout it is possible for short periods to safely exceed the above capacity.

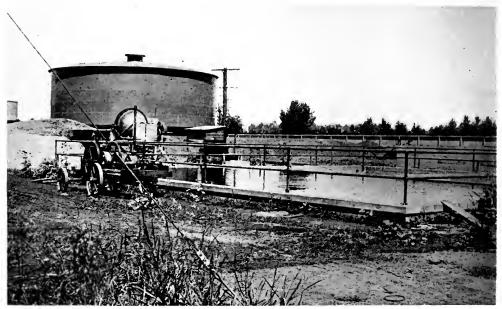
The laying out of the works, the engineering details, architec-

tural plans and landscape work, and, where possible, all other problems involved were worked out in advance, so that when the construction organization was ready and material assembled there was a definite program to proceed upon. The general layout of the works and the equipment that makes up the plant are according to the latest available ideas, and some of the methods and practice to be utilized in this plant are quite interesting.

steam and oil, pyrometer equipment for checking generator temperatures, and pressure gauges and indicators for air blast and gas pressure.

The blast air for combustion is pumped by two No. 10 Sturtevant blowers driven by high-speed reciprocating engines. These are situated on the ground floor of the generator room and located between the generators.

Each generator is complete with washer and primary scrubber; in addition, they



Sixteen-thousand-barrel oil tank, with water reservoir in the foreground.

GENERATOR UNITS. Two complete 12foot-diameter Jones improved oil-gas generators, each with a capacity of 2,000,000 cubic feet per day. These sets are installed in parallel, with operating equipment and controls all situated so conveniently that the gasmaker need not leave his seat in the performance of his duties, and, if necessary, can operate both units alternately. The generators are identical with other recent installations of the improved Jones gas generators, equipped with hydraulic apparatus for lifting and closing valves, indicating and recording gauges and meters, both total and flow meters for control of gas, air,

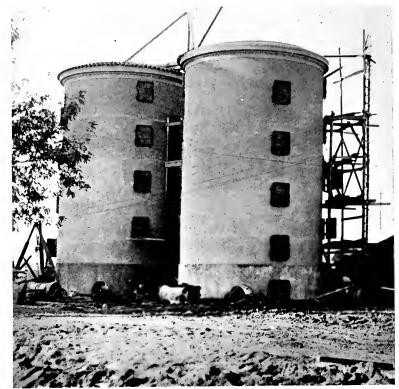
have in common two standard secondary scrubbers with a final oil scrubber.

On the operating floor is located a G. E. centrifugal exhauster, turbine-driven. This unit is set so that it is a part of the piping between either of the primary scrubbers and the secondary scrubbers. The exhauster will operate continuously under the control of a balance governor, drawing the gas as produced and relieving the generators from back pressure.

The washing and cooling water presented an interesting problem whose final solution is worthy of mention. The disposal of waste water meant the in-

stallation of pumps for the purpose, there being not sufficient fall from the works to insure the run-off of this water to Dry Creek. For economy it was planned to utilize the water over in both washer and scrubbers. This was accomplished by cooling and aeration system in connection with the settling and filtration tanks that were provided.

The washbox water flows from the washer, with its lampblack,



New type Jones concrete purifiers in process of erection at the works.

through an underground terra cotta pipe to the concrete settling boxes. Here the lampblack is deposited in bulk; the overflow from this empties into the filter pit, from which the water is drawn through canvas envelopes, depositing any trace of lampblack that may come over from the settling boxes. From here the water is pumped back to the washer. This will result in the use of warm water, a perfectly proper practice, for warm water will accomplish the purpose of the washbox as well as cold, and, at the same time,

not shock the gas too suddenly; thus, not condensing the tar but permitting it to pass over to the tower scrubbers, the function of which is to remove the condensable hydrocarbons from the gas. As the water is used over again, it will naturally increase in temperature and some loss will be caused by evaporation, so the control of the temperature and the addition of water to maintain the proper flow are provided for by the overflow from the scrubber water filter pits.

will also be circulated over and over. This water after passing once through the scrubbers flows to the tar pits and then to a concrete settling basin. From here it is discharged through sprays,

The cooling water for the scrubbers

the object being twofold: first to cool by evaporation and exposure, second, and as important, to aerate. The latter is essential as the water used in the scrub-



Laying 24-inch cast-iron low-pressure gas main along Tehama Street from the works to the city.

bers is depended upon to remove partly the H₂S contained in the crude gas. This impurity is very soluble in water, but to maintain this it is necessary to remove as near as possible all trace of H₂S from the water at the end of each cycle. Exposing the water in the form of a fine spray is all that is required to purify it. The water finally falls into a storage reservoir and any loss is compensated by adding fresh water from the well.

Boiler Plant. The steam generating plant consists of two 400-h. p. B. & W. boilers with latest accessories, including soot dusters. The boiler room equipment is all in duplicate and modern in every respect. The fuel is of course lampblack, but it is probable that the efficiency of converting oil into gas with the improved Jones generators will reach such a high degree that the residual will be insufficient to provide the necessary fuel. anticipation of this oil burners are provided. The lampblack is conveyed to the boiler room in cars, from which it will be stoked direct to the boiler furnace, the cars being designed particularly for this purpose.

The steam distribution is through a looped header which passes to the generators and engine room.

OIL STORAGE. In a far corner of the works there is installed a 14.000-barrel steel oil tank. This location was selected in order to isolate the storage of oil from the rest of the plant and, at the same time, place it adjacent to the oil-pumping station of the pipe line company so as to facilitate delivery direct from the station. The tank is set higher than the general ground plane of the works; this was accomplished by building a mound of the excavated material from the filter and settling tanks. Great care was taken to properly build this so that there would be no danger of settlement. A concrete pancake surmounts the mound and on this rests the tank.

In this position the oil is always under a pressure head to the pumps in the generator room. Surrounding the tank is a retaining wall of earth creating a reservoir for protection. The whole of this earth, both mound and retaining wall, have been planted to Bermuda grass, serving a practical as well as an ornamental purpose.

HOLDERS. The relief holder will be removed from the old works. It now stands as a 75,000-cubic-foot holder in a steel tank. It was originally built with provision for an extra lift and when it is finally moved to the new works it is intended to add the additional lift and erect it as a 140,000-cubic-foot holder.

The storage holder now erected has a

capacity of 1,000,000 cubic feet, and is of triple lift in a steel tank. The foundation work for the holders was simple. A trench two feet wide was excavated around the circumference of the holder for a depth of about three feet, at intervals of about twelve feet. This was carried to hardpan. Through the diameter of the holder at right angles two trenches were dug. The trenches were filled with concrete and brought to the surface, a plan of the foundation resembling a wheel with four spokes. Over the surface for the tank bottom to rest on was poured a concrete pancake; this was run in sections and in three layers so as to avoid fault lines. The only reinforcing used was at the surface to check against temperature cracks. The relief holder foundation was similar excepting that the cross wall of concrete in the center was eliminated, the circumference wall being sufficient for the purpose.

Purifiers. The purifier plant was built according to a design which was a unique departure from prevailing practice. Two concrete towers 20 feet in diameter by 35 feet in height, with plastered walls and red tiled roofs, would not be generally recognized as containers of oxide for gas purification. These towers do not contain horizontal partitions, but the four layers of oxide are open one to the other. The vertical flues for passage of gas are so designed as to permit up or down flow. Provision is made for continuous re-

vivification, while a box is in service which will eliminate the difficulties and expense of constantly changing material to revive same.

Buildings. The permanent buildings decided on included the generator house, in which is located all of the plant equipment essential to production, such as generators, boilers, blowers, heaters (oil and water), pumps, exhausters, compressors (gas and air), and other miscellaneous equipment. This building is 120 feet long by 70 feet wide and 40 feet to the eaves; it is a steel frame structure covered with corrugated iron, excepting a skirt around the base four feet high of plastered concrete. At the main entrance this same idea was adopted and a plastered concrete arch was provided. The interior of the building is ideal for the purpose; it possesses an abundance of natural light and ample and perfect ven-The boiler room is separated from the generators and engine room by a concrete partition, with doorways pro-The operating apparatus of the generators is all located on a floor surrounding the set and is not carried out to the side walls of the building. In this way ventilation is not baffled. Additional buildings provided for consist of:

A warehouse erected alongside of the spur track that enters the works. This building was established with a view of retaining it after the completion of the works.

A shop in which will be located all equipment for repairs, such as tools, blacksmith and pipe shop. Under the same roof are provided lockers and washing facilities for the men.

The pump house. This is to be installed at the base of the tank tower and adjoining the water filters and storage reservoirs.

The administration building, in which are located the works, office, station meters and laboratory, with provision for a governor and booster if in the future either is required.

The designs of the main buildings

harmonize with one another and with the general yard structures, and along with the landscape gardening, although not elaborate, will present a very pleasing and attractive exterior.

The grounds and buildings are entirely lighted with gas, and by the use of parabolic reflectors the operating floor and generator shells receive a flood lighting effect that gives excellent results. The same principle is to be observed in flood-lighting the exterior of the buildings.

The new location of the works required the installation of new pipes to tie in with the distribution system. To accomplish this a 24-inch cast-iron low-pressure main was laid for a distance of 3600 feet, and at its terminus a 16-inch cast-iron pipe carries the gas in the direction of the business district with the object of tying into the main trunk line of the old system. Also, a 12-inch cast-iron pipe was laid in the direction of the residence section; this latter line ties in with one of the extreme ends of the existing low-pressure distribution system.

All the cast-iron pipe was laid with cement joints, and in spite of the fact that the work was done during the hot summer months it was a completely satisfactory job.

At the old works it is intended to maintain the storage holder. This is to be supplied with gas from the distribution system during the periods of minimum demand or, if necessary, by the existing high-pressure transmission main that will be left in service and extended to the new works by a three-inch wrought-iron all-welded line. The high-pressure system which furnishes gas to the outlying districts will now be supplied by a fourinch welded transmission main which extends along the outer boundary of this district and will in time, as the city grows, pass directly through this suburban section.

[It is on the cards that by the time this issue of Pacific Service Magazine reaches its readers our engineers will have started making gas at the new works. It is proposed, therefore, to follow up the present article with another dealing with the engineering features of the works and illustrated with views of the completed plant, exterior and interior.—Editor Pacific Service Magazine.

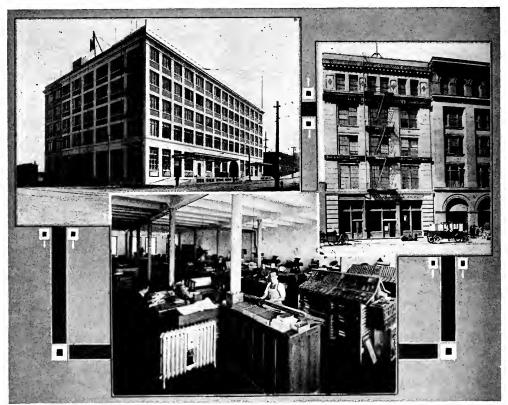
Gas, the Logical Fuel for House Heating

By H. M. CRAWFORD, Engineer, Industrial Fuel Department, San Francisco District

the gas industry, gas lighting was formerly the main source of revenue of the gas business. The development of electric lighting resulted, naturally, in a considerable reduction of the gas load and so the energetic gas men brought out

however, and which has been much talked of lately, is the use of gas as a fuel for heating.

House heating, like gas lighting, the stove and water heater, is universal in nature, as almost every home needs quick heat on the cold, damp days of the year,



Upper left, Commercial Building, Harrison Street and the Embarcadero, San Francisco; right, premises of L. G. Wolfe & Co. and the Baker-Vawter Co., 134 Fremont Street; lower, one of the three floors occupied by L. G. Wolfe & Co.

gas stoves and water heaters, which more than replaced the loss. Then the electric range and water heater were introduced and gas lost some of its business to this new competition. But the conservative gas man, who has proved the value of his product as a domestic fuel proposition, wants to hold fast to it because he knows it is good.

Another domestic field equally good,

and almost every gas meter, we might say, is a prospect for the sale of gas as a fuel.

Gas is the ideal fuel for heating. It is available instantly day or night by turning a valve; paid for after it is used; a sure supply at a fixed price.

These are big points in favor of gas as fuel. But, think of the advantages of a fuel which can be regulated to keep your



Cliff Dwellers' Apartments, 1315 Taylor Street.

house scientifically heated in our changeable climate, and save your family the usual winter colds, to say nothing of the bother of ashes, dirt and stoking.

Many churches, stores and some residences purchase so little gas that their accounts do not return to the gas company the amount of expense incurred to serve them, plus a reasonable profit. But they get their service, just the same. Now, the additional gas used for heating will convert this type of consumer into a profitable one, as gas heating is installed without additional investment in mains or service. In addition, gas heating will tend to better the load factor, inasmuch as the general use will be during the hours when the present load is lightest.

Even gas men are apt to think that no new methods of gas heating can be introduced because coal and wood heating, oil furnaces, air-tight stoves and similar equipment have been standard for so many years. Where gas has been used to any great extent in the past it has been in the form of the portable heater. These

and similar appliances of the non-vented type cannot be used for heating without having the fumes in the room, and this in many cases has more than offset the convenience and advantage which is so marked in gas heating.

Happily this state of affairs is nearing an end by the introduction of appliances which will enable the consumer to enjoy all of the advantages as above mentioned.

One such appliance which comes near to perfection is the Rector System of gas heating.

This appliance is entirely different in principle from any other gas heater. Heat is supplied from a cast-iron radiator indistinguishable from those carrying steam or hot water. The radiators are connected by a system of piping which leads to an

electric motor and blower in the basement, through which all the gas odors or products of combustion are carried away. There is never any possibility of any fumes coming into the rooms. This blower also serves to draw into the room a supply of fresh air, thus maintaining purity of atmosphere regardless of the length of time the room is heated.

One of the greatest advantages in connection with the system is economy of operation. It burns gas in a partial vacuum created by the motor and blower, consequently the air is drawn into the burner, making a perfect mixture with the gas, and complete combustion is the result. The heated fumes are drawn by the motor and blower through the various sections of the radiator until all of the heat is extracted and radiated into the room, and then the practically cold fumes are carried on to the outside of the building. This means, in other words, that all of the gas used is turned into heat and represents a saving of practically twenty per cent in gas bills over the

ordinary vent type of heating.

Perfect temperature control, so essential to good health, is easily attained with the Rector System by the addition of a simple thermostat which automatically controls the amount of gas admitted to the burner. The perfection of the Rector has made it possible to solve any heating problem, even to large buildings. It is more than a radiator, it is a complete

heating system and can be installed in any building, new or old.

A new need, or rather one just fully realized, is that better temperature regulation is required in industrial plants, factories, offices, etc. Many women are now employed in these and proper heat prevents all employees from taking cold, which means time off and lost production. The scarcity of labor necessitates the best of care in this particular; all must work steadily as there is no supply of trained substitutes waiting to fill the gaps left by sickness. Men and women can show best results when working in comfortably heated quarters.

An example of the benefits derived from proper heating is available in the new plant just completed for the L. G. Wolfe Co., at 134 Fremont Street, San Francisco. This is a new and complete commercial printing and bookbinding plant, newly equipped with special machinery occupying a floor space of 11,000 square feet. Twenty-one electric motordriven machines and presses are operated by "Pacific Service." All kinds of commercial printing and bookbinding are done by the company and a special plant for the manufacture of loose-leaf ledgers has been installed by Mr. Wolfe. There are many units of printing presses with



Residence of Mr. D. W. Scanlon, Ingleside Terrace.

automatic attachments which are almost human in their operation. This plant promises to be one of the foremost printing establishments in San Francisco, and one particular phase of this industry is the necessity of an even temperature throughout the factory. Mr. Wolfe stated recently: "We installed a complete heating system in our plant because we knew temperature regulation to be one of the very essential things necessary in turning out the best quality of work in the least time, inasmuch as the inks and papers must be properly dried and their temperatures exactly correct at all times. We are securing complete control with the Rector System of gas heating. Our emplovees are working in properly heated rooms, which condition has a decided effect upon production."

The Baker-Vawter Company, dealers in loose-leaf systems and filing cabinets, also use the Rector System of gas heating in their new offices in the Wolfe Building.

The Rector System has been installed in the new government telephone exchange at the Presidio in San Francisco. The heat supplied in this building must be perfectly dry and pure owing to the mass of delicate and intricate electric switching apparatus. The Rector is admirably adapted for the purpose.

UR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION



The epidemic of influenza, now, happily, all but a thing of the past, was responsible for a complete cessation of all Association activities during the month that is past.

Several entertainment features had been scheduled, only to be abandonedor, rather, postponed—one by one in obedience to the stringent rules laid down by the health authorities. been planned, for one thing, to hold a big dance at the Hotel Oakland, where, it will be remembered, one of the most successful gatherings in the history of the Association was "pulled off" last year. The evening of Hallowe'en had been set, the ivory ballroom of the hotel engaged, the committees appointed, the announcements printed, all arrangements, in fact, completed. It was indeed a pity to be compelled to forego the pleasure of this reunion, for those in charge of the affair had determined to strain every effort to repeat the great success of last year.

Another gathering that went by the board was that scheduled for Auburn, in the Placer District, one of the series of out-of-town meetings that the present management inaugurated in line with its get-together policy. The first date set for this was October 19th, but owing to a death in the family of Mr. C. R. Gill, the power superintendent of Placer District, a postponement was ordered to November 2nd. This time health conditions stepped in to compel an abandonment of this

feature.

It had been arranged also to hold an out-of-town meeting at Marysville in the near future. This, like the others, may be regarded as a deferred pleasure.

The epidemic struck into the heart of our Association when it laid Chairman K. I. Dazey and Mr. R. E. Fisher low. It is indeed a pleasure to be able to announce that both these gentlemen are now on the way to complete recovery and, in all probability, will have returned to their desks before this issue of Pacific Service MAGAZINE reaches its readers.

And now the signal for a resumption of activities has been hoisted and the annual meeting of the Association, which

in the natural course of events would have been held on November 12th, has been announced for the evening of November 26th. At this meeting the principal item of business will be the report of the nominating committee appointed to select a board of directors for the ensuing twelvemonth. There will be elected a chairman, a vice-chairman, a secretary, a treasurer, and four members of the executive committee to serve for two years. The outgoing officers are Chairman K. I. Dazey, Vice-chairman F. R. George, Secretary R. W. Robinson, Treasurer H. Bostwick, and the following members of the Executive Committee: R. E. Fisher, A. U. Brandt, E. A. Weymouth, R. A. Gentis. Under the inexorable rules of the Association the chairman serves but one term, so that a successor to Mr. Dazey will be elected. In the event of Mr. F. R. George being the choice of the nominating committee, there will be a vice-chairman to be elected in his place. There may, or there may not, be other changes to report in our next issue.

The nominating committee consists of the following members: Mr. L. H. Susman, Law Department, chairman; Messrs. C. E. Young, Electrical Engineering Department; Neil Murphy, Purchasing Department; A. B. Parratt, Accountant Alameda County District; J. H. Pape, Assistant Manager Alameda County District.

Mr. Roy J. Cantrell, our company's Property Agent, sprang a surprise upon his associates when, on November 12th, he announced his marriage to Mrs. Eugenie Compagnon in San Francisco. The first news his friends had of this was when they read the notice in the marriage license columns of the daily papers.

Mr. Cantrell has been popularly identified with "Pacific Service" since 1904. He is a native of California, hailing from Yreka, in Siskiyou County. His bride is a very charming and accomplished young woman. The happy couple plan to establish their permanent residence in San Francisco, and the best wishes of all the members of "Pacific Service" go with them in their new life.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

Lieutenant Emmet N. Britton of the 363d Infantry, "somewhere in France," formerly of "Pacific Service," has written a series of letters home which will well serve as a composite picture not only of the life of the American soldier in France but of his thoughts and ideals in connection with the great struggle to abolish autocracy and militarism forever from the earth. Vividly he tells of the order to advance to the front:

"I believe the last time I wrote you we were camped in a small wood, hiding ourselves and being continually rained on. Try to imagine the scene—a regiment of infantry (some 3000 men) camped in a sparse wood which covered about twenty acres, all in pup tents; a cold wind driving in from the southwest, throwing the rain in sheets against the meagre shelter of the men; dusk, that hour of the day when one's vitality is lowest and the most appealing thing is a hot meal and a warm, dry bed. The scene is laid, picture it if you can.

"Suddenly a motorcycle courier comes along the road at forty miles an hour and jumps off opposite the C. O.'s tent. Then officers' call, the order to march is published, then strike tents. To really understand the difficulties of striking tents in the rain and darkness, perhaps I had

better do a little explaining. "Each man carries onehalf of a shelter tent, one pole and five pins. shelter half is a piece of canvas 6x4 feet and forms the outside of the roll a man carries. To make up a roll the shelter half is spread on the ground, the one blanket is laid on it and inside of the blanket are placed the poles and pins, the one suit of underwear and three pair of socks, which make up all of a man's outfit with the piece of soap, one razor and one shaving brush. Add to that one can of bully beef and eight pieces of hardtack and you have the contents of a man's pack. Now, a piece of canvas is a darn

hard thing to handle when it is windy, so on a rainy day when there is a wind it is no fun making up a roll, for as soon as you strike tents all of your stuff starts to get wet and your shelter half will not lie

"But strike tents we did. Then the assembly, forward march, and in twenty minutes the column of men over a mile and a half long, followed by the wagon trains, was splashing along the dark, muddy road, the silence unbroken save for the clump, clump of the hob-nailed boots. And so on through all the long, dark, wet night.

"We passed through towns and villages, cities and countryside, over rivers and across railroad tracks, but pushing relentlessly on. When the light in the east was just becoming apparent and one could begin to make out the figures of the men in front and they began to assume definite form instead of being just darker blotches in a dark surrounding element, we pulled into a fair-sized town, once prosperous but now partly in ruins. The men were stowed away into barns and lofts full of soft, sweet-smelling hay, to hide away and sleep off the effects of the night's work as only a tired soldier can sleep, forgetful of rats, spiders or even 'cooties'.

> "Our stay in that town was not a long one, for the next afternoon, with a clear sky overhead, we picked up and left under more advantageous conditions. a walk of a few miles we hopped into motor trucks (750 of them in one string) and started, and at dawn we landed in another town several miles from where we started. And here we are."

> Then the climax of the Great Adventure—the first journey into No Man's

Land:

"We went over the top in a dense fog into a perfect jungle which was full of machine guns and snipers. We played tag with them until we got tired of it and got mad enough to get



Lieut. Malcolm L. Hunt, 316th Engineers, 91st Division, A. E. F. (Formerly of Alameda Co. District.)

started and then we went. When Fritz saw us coming, and, believe me, we were coming, he got scared and threw all his hand grenades away so he could run faster. The lads on either side couldn't keep up and after three days of pushing forward we had to hold the ground we had gained and wait with both flanks exposed for them to catch up. They never did make it, and fresh divisions had to be put in, so you see our Western lads are some fighters. After nine days of fighting we were relieved, as we were pretty well battered up by the artillery fire that was poured in from our flanks. They dragged me out of the fight the day we

were relieved, so I got all of the same punishment that the outfit did—and of that I'm mighty glad or I would have felt

like a slacker."

Writing from a base hospital where he dismisses his wound as of no account: "I didn't pull off any of the hero stuff, nor have I heard my name mentioned for a D. S. O. Like the rest of the lads in the outfit, I did all I could to maintain the reputation of the American Army and make as many Boche sorry that they sank the Lusitania as I could. I am not boasting when I say that I did not experience any actual fear, though I had the distinct honor of having several Boche sniping at me with machine guns at one time while I was splicing a wire. They are rotten shots—if they were trying to hit me."

The attitude of all those brave young men who, against all their natural instincts and training, are called upon to take the leading part in this war is summed up in the closing paragraph of his letter:

"Sherman was right, only he didn't go far enough. I guess the censor wouldn't let him. While you are in the fight you can stand unspeakable hardships and never kick. Your whole finer self is obliterated, and you become only a darned good hunter, nothing else matters. The excitement of it all is like a big game—you take big chances to attain the ultimate success and don't count the cost. But the real hell is when the heat of battle goes out of your head and you begin to think.



J. J. Madden, Chief Electrician, U. S. Naval Air Station, Gironde, France. (Formerly Elect. Dist. Dept. S. F. Dist.)

It is like a wound, it doesn't hurt much at the time, but later. But we all have to become penny philosophers and make the best of it."

Lieutenant Ralph W. Waltham, formerly line foreman of Alameda County District, wrote under date of September 19th from Clermont-Ferrand, France. Lieutenant Waltham is in the air service and had special training in a bombing school before going to France. He writes as follows:

"Electric distribution is a problem here that must be hard to buck. The towns are usually built around some central object,

a church, garden or market place, and resemble to some extent a concentric wheel with six or eight spokes. Lines run over house tops, are bracketed to walls, stuck on steel poles or apparently any handy object. The streets are, as a rule, so narrow that a pole line on it could not be accommodated. At Royat I noticed a bracket carrying twenty-four lines stuck on the front of the Palais Royat, a leading summer hotel, at the fourth floor dining terrace. I can't imagine getting away with that even in Decoto."

The following clipping from a French paper, Le Petit Parisien, has been received, which gives the details of the accident which resulted in the death of Captain A. R. Thompson, formerly superintendent of Electric Distribution in San Francisco District:

"Captain Thompson of the United States Army was killed and his companion in an automobile was injured, when the wheel of a wagon loaded with heavy beams gave way and the load fell on the passing automobile at the corner of the Rue Faubourg Saint-Martin and the Rue Lafayette. Captain Thompson was buried beneath the wreckage of the automobile, and was dead when extricated."

A letter received from Milton Barr states that he is serving on the U. S. S. Nirvana, which is being used as a submarine chaser. When he wrote he had just been detailed on cooking, and as

he has first chance at all of the best part of the grub he likes it first rate. As proof thereof he states that he has gained from 135 to 162 pounds in weight since entering the service. He also does not neglect to put in his boost for sunny California, which he says beats the East ten to one.

In a letter to Mr. Percy Hardenburgh, Private Clarence Merlinjones, formerly of San Francisco Supply District, writes from Royat, France, regarding his work in the hospital service: "After arriving here we were certainly busy cleaning out the French hotels and setting up the furnishings for the hospital. We

are not in one hotel but are occupying more than one. As you can imagine, this makes it somewhat more difficult for us. This town is full of springs with water running in the gutters all the time, and here are located some mineral baths, but sanitary plumbing, real baths, etc., are unknown. But, thank the Lord, a bunch of engineers blew in on us the other day and are installing shower baths, sinks, etc., that they guarantee to work. It was not long before the hospital was filled. I am in the X-ray department and certainly like the job—do everything from sweeping the floor up. Men carrying German metal inside of them come to us and we localize the stuff and then the surgeon reaches in and pulls it out. There is no guesswork on the surgeon's part, so you can imagine the suffering saved the patients. We have a machine for setting bones and I also have a complete photographic outfit for making medical pictures, etc. I was never so interested in any work in my life before."

The employees of the Electric Distribution Department in Oakland are delighted to learn that Lieutenant Francis I. Maslin has recently been promoted to captain of engineers. Lieutenant Maslin has been in the motor transportation service continuously since being in France. He was active in the St. Mihiel battle and was on duty for four nights and four days in a driving rain during that period. His duties have given him a wonderful opportunity to see France from one end to



Co., 347th Field Artillery, A. E. F. (Formerly of Colgate District.)

the other, and his wife says that he has collected a fine assortment of war relics. It is probable that he has been assigned to a different line of duty since his promotion.

Ensign H. E. Sandoval and Ensign R. R. Bertolacci are on duty at the Union Iron Works, San Francisco, as inspectors for the Navy Department. Both of these officers were formerly with the Electric Department, Alameda County District.

In our last number mention was made of Leon J. Mills, who was wounded in action. Under date Oct. 7th Mr. Mills wrote from Limoges, France, as follows:

"I had a little mix-up with a shell on July 21st. It put six holes in my hide and I am still in the hospital. None of them proved serious except one in my foot, which will keep me from hiking from now on. I do not complain because it is much better than finding my head shot off. Treatment and surgical care in these hospitals are perfect; clean sheets in place of mud to sleep on, no cooties or crumbs to do 'squads East' over your chest when you try to sleep, plenty to eat, and pretty nurses to care for one. Not such a bad war after all, is it?"

Charles Merritt Cowell, formerly of Alameda County District, has been advanced to assistant instructor in navigation and ordnance at the naval school in Cleveland, Ohio.

NOTICE

One of our company's 25-year service badges was found about October 1st, 1918, in a street car going to the beach in San Francisco; also a ten-year service badge was found about October 15th on the main floor of the company's office building. Owners please communicate with the office of the vice-president and general manager.

The Story of Captain K. R. Varney

Word has been received that Captain K. R. Varney of the 301st Battalion Heavy Tanks has made the supreme sacrifice in the cause of world liberty. A letter written to his mother by a lieutenant in his command conveys the sad news of his

death in action on the French front.

His was an active life, full of energy and purpose. Born in March, 1878, in Virginia City, Nevada, he came to San Francisco in his early youth with his parents, Mr. and Mrs. J. W. Varney, and was educated in the public schools of this city. After graduating from school he went to work in various occupations. He gained a knowledge of mining engineering by practical experience in Arizona, Lower California, Idaho and Alaska, and this proved valuable to him in his military life. He entered the employ of "Pacific Service" in September, 1911, in the steam - heating de-

partment, and remained there until September 1, 1917, when he received his commission as Captain in the Engineer

Corns

He was assigned to the 23d Engineers at Camp Meade, Baltimore, but he soon volunteered for the tank service, his one thought being to get to France and get into action quickly. He finally went "over there" with the 301st Battalion Heavy Tanks, B. E. F., and wrote most proudly and enthusiastically about his "Bear Cats," as he called his company. The love and respect in which he was held by his men could not be better exemplified than by the following excerpt taken from his comrade's letter:

"He was one of the finest of men that I have come in contact with, and was

adored by both his officers and men. He led his men because they loved him and was an inspiration for all that came in contact with him."

Captain Varney was killed leading his tanks into action, and life departed from

his body instantly. What better could be said of any

"Chip," as he was known in the world of athletics, was before the public for twenty years as a football player and a noarsman. started his career as a junior in the Olympic Club, but first made a name as a half-back for that club in 1898, playing for them until 1901. He then joined their deadly rivals, the old Reliance Club. In 1903 he took up rowing for the Olympic Club and stroked their senior four crew until the Olympic Club boathouse at Belvedere was discontinued. was onee

wrecked in a canoe between Angel and Alcatraz Islands and hung on to it for He joined three hours until rescued. the South End Rowing Club of this city in 1908 and was one of its staunchest supporters. He stroked the junior and intermediate championship crews in 1910, and won many other honors in the rowing world. He was captain in 1915 and 1916, and to his advice and coaching is due much of the South End Club's recent success in rowing. He was said to be the strongest man that ever sat in a boat in the San Francisco rowing clubs and was, unquestionably, the best liked.

He leaves a mother, two sisters and three brothers to mourn his loss. Countless friends both in and out of "Pacific Service" heard the news with deepest sorrow and regret.





Miss Letitia A. Curtis.

Miss Letitia Curtis the First American Woman to Cross the Frontier Into Germany

Miss Letitia A. Curtis, our own Miss Curtis of "Pacific Service," who until recently held the position of head stenographer in the Electrical Engineering Department, enjoys the unique distinction of having been the first American woman to cross the frontier into Germany since the beginning of the war.

This unusual honor seems to have been won by her through her own initiative, through the spirit of get-up-and-do that is typical of the Western girl. The news of her achievement was given us in the following news service dispatch from Berne, via Paris, dated November 20th:

BY ROBERT S. DOMAN

Staff Correspondent International News Service

Letitia Curtis of San Francisco and Cheta Geary of Denver, attached to the Swiss Commission of the Red Cross, were the first American women to enter Germany since the beginning of the war.

They crossed the Rhine into Baden at Loerrach on Sunday, some days before the armies of occupation were due. The girls drove a motor truck filled with supplies for the feeding of the hundreds of Italian, Russian, French and British prisoners and the

few American prisoners.

Prussian officers acted courteously toward the Americans, holding up retreating artillery convoys on congested roads and bridges to permit the motor truck to pass. Retiring German soldiers, with red flags thrust into the barrels of their rifles, cheered the girls, who had placed an American flag on their motor truck.

The soldiers cheered vociferously when they learned that the Kaiser had fled and hurrahed for the "three republics—America, France and Ger-

many."

When the motor truck stopped, the German soldiers gathered around it offering belt buckles, shrapnel, helmets and bayonets as souvenirs.

Released prisoners encountered by the two American women were greatly in need of food and clothing. Small bunches of them were overtaken patiently plodding in the direction of France. This good news has been received with the greatest possible enthusiasm by the young woman's many friends in the company and outside. Needless to say, her mother, Mrs. Laura A. Curtis of 1516 Masonic Avenue, San Francisco, is a proud mother today.

Miss Curtis had been with us for many years. She was always active and obliging, and at the time of the organization of our Pacific Service Employees' Association she undertook the work of arousing the interest of the women employees. She was most energetic at the monthly gatherings of the association in promoting the various entertainment features, notably dancing.

Inimediately upon the entrance of the United States into the war she determined to volunteer for foreign service and filed an application with the American Red Cross. From that day she laid her plans so as to be ready to start when called upon. Her patriotism was rewarded about the first of last September, and when she gave the tidings to her associates in the company they held a farewell gathering in her honor, at which the following parting message was dedicated to her:

We salute you, the first woman of "Pacific Service" to volunteer for

foreign service.

We laud your patriotism in breaking the warm ties of home and friends to answer the call of duty overseas with its cold certainty of

labor, trials and sacrifice.

We believe the unusual experience and the broad opportunity for personal development of character will far more than repay you for the many hardships you will have to endure, but the feeling of duty well done will be your greatest reward.

We wish you Godspeed; our good

thoughts go with you.

Miss Curtis left San Francisco September 7th, sailing from New York eleven days later. On October 3d she arrived in Paris and from there was sent into Switzerland. The last letter received by her mother told of her arrival at Berne.

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

E present below preliminary income account statements, in condensed form, for the month of October, 1918, for the ten months ended October 31st, 1918, and for the twelve months ended October 31st, 1918, contrasted with the same periods of the preceding year.

PRELIMINARY INCOME ACCOUNT

MONTH OF OCTOBER

	1918		1917	INCREASE	DECREASE
Gross Operating Revenue	\$ 1,910,6 1,339,3		\$ 1,619,738.74 1,183,509.58		
Net Earnings from Operation	\$ 571,3	34.19	\$ 436,229.10	\$ 135,105.03	3
ADD Profits on Merchandise Sales and other Miscellaneous Income		87.22	53,175.00)	\$ 13,087.78
Total Net Income	\$ 611,4	21.41	\$ 489,404.10	\$ 122,017.25	5
DEDUCTIONS: Bond and other Interest	15,4	55.04 26.41 61.53	15,426.4	1	\$ 4,315.63
Total DeductionsBalance		42.98 78.43		\$ 125,806.69	\$ 3,789.44

TEN MONTHS ENDED OCTOBER 31ST

	1918	1917	Increase	DECREASE	
Gross Operating Revenue	\$18,412,851.11	\$16,296,963.06	\$2,115,888.05		
Expenses, including Taxes, Reserves for Depreciation, etc		10,477,208.27	1,921,641.08		
Net Earnings from Operation	\$ 6,014,001.76	\$ 5,819,754.79	\$ 194,246.97		
ADD Profits on Merchandise Sales and other Miscellaneous Income	407,203.99	446,921.13		\$ 39,717.14	
Total Net Income	\$ 6,421,205.75	\$ 6,266,675.92	\$ 154,529.83		
DEDUCTIONS: Bond and other Interest	\$ 3,433,294.00 154,264.10 1,242,770.51	154,197.69	66.41		
Total DeductionsBalance	\$ 4,830,328.61 \$ 1,590,877.14	\$ 4,803,471.36 \$ 1,463,204.56	\$ 26,857.25 \$ 127,672.58		

PRELIMINARY INCOME ACCOUNT

TWELVE MONTHS ENDED OCTOBER 31ST

	1918	1917	INCREASE	DECREASE
Gross Operating Revenue Expenses, including Taxes, Reserves for Depreciation, etc		\$ 19,579,199.48 12,264,787.30		
Net Earnings from Operation	\$7,152,937.20	\$7,314,412.18		\$ 161,474.98
Add Profits on Merchandise Sales and other Miscellaneous Income	468,630.01	602,694.26 \$7,917,106.44		134,064.25 \$ 295,539.23
DEDUCTIONS: Bond and other Interest	185,116.92	\$4,025,401.79 183,065.38 1,457,726.83	\$ 96,029.78 2,051.54 33,023.75	
Total Deductions	\$5,797,299.07	\$5,666,194.00	\$ 131,105.07	
Balance	\$1,824,268.14	\$2,250,912.44		\$ 426,644.30

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF OCTOBER 31ST

October 31st	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	118,847	52,666	5,505		177,018
1908	129,044	60,164	5,744		194,952
1909	136,791	68,318	6,332		211,441
1910	149,440	81,050	6,673		237,163
1911	163,679	97,207	7,200	63	268,149
1912	193,295	113,571	7,895	197	314,958
1913	205,479	128,871	8,325	258	342,933
1914	217,880	145,278	9,041	314	372,513
1915	227,534	163,577	9,562	365	401,038
1916	230,616	176,131	9,910	395	417,052
1917	241,031	191,449	12,520	427	445,427
1918	252,623	206,582	13,052	449	472,706
ain in 11 years	133,776	153,916	7,547	449	295,688

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEP FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month

 Year's subscription
 \$1.50

 Single copy
 .15

Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X NOVEMBER, 1918

No. 6

EDITORIAL

Victory!

And, as the grand result, Peace!

How to express it? How to set out in cold type all that the heart holds at a time like this, when the entire world quivers with the joy, the wonder of it?

Even at this hour of writing, when the bells have done their ringing, the crowds their shouting, and the commonplace routine of every-day existence has been resumed, one feels tempted to pinch one's ear, or do something equally fantastic and absurd, to make sure that, after all, it has not been a beautiful dream.

But no, it is not a dream. It is all true, really true. The dread menace that for four long years hung over the civilized world and that threatened at one stroke to wipe out the work of centuries and take us back to something worse than the dark ages of feudal tyranny, has been banished, never, we trust, to trouble us more.

The bitter struggle for world freedom is over, and though there may yet be rocks in the path of progress, differences to adjust and difficulties to straighten out, the main object for which the allied nations went to war has been achieved and the right of every country to govern itself according to the laws of God and man, without let or hindrance, fear or favor, has been established for all time.

Surely this is an appropriate season of the year at which to celebrate the world's deliverance. It is the period of Thanksgiving when, according to established custom, the President's proclamation bids the good people of the United States bend the knee and give humble thanks to Him who rules our destinies for all His blessings of the twelvemonth. This year the annual festival bears a significance far deeper than any that have gone before. With bounding pulse and sparkling eye, one and all, we send forth our songs of praise with a fervor that is not merely upon the lip but comes direct from an overflowing heart. Throughout the entire world the feeling of relief knows no bounds. Our last dark page in history has been turned, and now, hand in hand, with one accord, peoples who have never before known perfect union of sentiment, never clasped hands or looked eve into eye in the spirit of perfect brotherhood, join step together and turn to a brighter and better prospect from which there shall be no looking back.

For us in the United States the end of the war, so far from bringing about anything like a depression, to say nothing of a slump, promises an era of unequalled industrial activity. We are setting out to help reconstruct, to help feed, to help restore lands and peoples that have suffered bitterly in the struggle, and at home we have awakened from a sense of ease and comfort to one of duty, that we may not stay content with things as they are but may strive with every nerve that is in us to realize our dream of a perfect civilization. To that end every industry will be taxed to its limit; there will be work to do, in plenty, for all who are willing to bear a hand. Our great country will take her place at the head of nations progressive in the right sense of the word, and every one of her citizens will be called upon to do his "bit" as in the time of war.

With no small pride at this time we point to the service flag that is displayed at "Pacific Service" headquarters with its six hundred and one stars. Of these five are gold stars, showing that "somewhere in France" that number of loyal boys that were once of our "Pacific Service" family have made the supreme sac-

rifice in honor of their country and the great cause that was hers. We take this opportunity to pay tribute not only to those who fell upon the field of battle—God rest their souls!—but, also, to those others—many times their number, thank God!—who have been spared and will, in the natural course of events, come back to receive the honors that are due them. One and all they were imbued with the spirit of self-sacrifice, and with light heart they journeyed "over there," each cheerfully content to accept whatever lot might be dealt him through the uncertain fortune of war.

A word of tribute, we think, is due those of our "Pacific Service" family who, since the United States entered the struggle, have offered their services for welfare work overseas in the various institutions having care of the boys at the front. While they were not called upon to serve in a military capacity, nevertheless they left their homes and friends behind them, filled with the spirit of self-sacrifice, prepared to meet whatever privations or hardships might come their way; so, in this manner they deserve recognition similar to that accorded our fighting men.

It is only fitting that the names of these former employees of "Pacific Service" should be inscribed in a sort of auxiliary Roll of Honor:

RED CROSS.

Miss Letitia A. Curtis, Head Office.

Mr. Verne Jones, Sacramento Supply District.

Mr. Carl Koch, Sacramento Supply District.

Y. M. C. A.

Mr. Jesse E. Traxler, Alameda County District.

Concerning the first name on this list our readers will find something of unusual interest in another part of the present issue. Hats off to Miss Letitia Curtis!

Speaking, in particular, for the industry with which we of "Pacific Service" are most concerned, the requirements of peace will undoubtedly be as great as, if not greater than, the requirements of war. There is a power program now under consideration by the authorities in Wash-

ington which represents only the beginning of what must be carried out if the nation's needs are to be satisfied in the best available manner. The day of the declaration of the armistice the president of the State Railroad Commission was quoted to the following effect: "There must be a tremendous development of hydro-electric power here." The financial editor of the San Francisco Call observes: "Peace promises to exert a tremendous influence on the development of 'white coal' in California."

It is agreed that power requirements for the industries in Northern and Central California during the coming year will be just as heavy as, if not heavier than, they were this year, despite the fact that the war is over. It is pointed out that practically all of the California so-called war industries are in reality peace industries, which for the time being have been engaged in filling Government orders but which, on the resumption of normal conditions, will take up their usual business where it left off without diminishing their output.

Then, too, it must be remembered that the war emergency water-power program that has been outlined by Major George F. Sever of the War Industries Board, and to which we referred in our last issue, is still very much in order. Major Sever has told audiences over and over again that there will be just as much need for the development of his program during the reconstruction period as during that of active hostilities. Furthermore, for the peace time to come there has been laid out a plan of industrial expansion throughout the Golden West that is likely to tax the resources of the power companies to the utmost.

Mr. John H. Rossetter is responsible for the statement that California fuel oil will be required in the merchant marine if the United States is to compete with foreign shipping. The only practical substitution for oil fuel in this State is water, so that it is safe to say that to the white waters of the Sierras we must look for the energy that is to turn the industrial wheels of California. All that is needed is the practical encouragement of the United States Government, and this we look to with more confidence than we have ever before felt encouraged to entertain in our hearts.

Tidings From Territorial Districts

Alameda County District

The news of the armistice which came on Monday morning, November 11th, set us all full of enthusiasm. Everyone reported for duty, but there was no work in anyone. Some departments made an effort to start routine but there was no response. There was joy in the heart and thanksgiving upon the lips. It soon found

expression in cheers and song.

A lock-step march started on the top floor of the main office, 13th and Clay. There was only one song and that was "Over There." The single line increased as it marched down the corridors of each floor and by the time it reached the main floor the enthusiasm of song was intense. The lock-step procession, now some two hundred girls and boys, wended its way out upon the street and around the block. The sidewalks were becoming thronged with people; processions of shipworkers filled the streets. Through this the "Pacific Service" line proceeded. "Over There" never rang out with more feeling; never, to us, had it more meaning; yes, it was over-"Over There." Uncle Johnnie Clements said that it brought back to him that famous day in April, 1865, when word came that Lee had surrendered. Uncle Johnnie was in the Government military railway service, quartered at Chattanooga. Immediately twenty-eight locomotives were fired up and the whistles tied down in open blast. That was for country-wide freedom; now it is world-wide.

Marchants Calculating Machine Company have installed additional Stewart Barium Chloride gas-fired furnaces for hardening high-speed steels. Treating the steel in a crucible prevents loss from spoiled pieces, while assuring more work and finer results. This perfect hardening means double the life of high-speed steel tools. Gas is used exclusively in the factory for metal treating.

Bob Miller knows of a man who, after writing a few minor poems, married then wrote Paradise Lost. The wife died and he then wrote Paradise Regained. Bob now wonders why Turkey entered the war in the first place. He thinks a man with 300 wives should have trouble enough at home without starting any outside.

Charlie Cone of the Collection Department says ringing door bells with a mask on to collect money is like the real thing. He had often been so accused but never thought he would come to looking the part.

Ray Biven, at the main counter, thought masks to be great; put the soft pedal on garlic.

"SERVICE" A SELF-SOLICITOR OF BUSINESS

To those living in this era has come proof of the theory of the "wise ones" that "Service" sells itself.

Many years ago, and not too many to be remembered by a few, advertising did the work. It still stimulates sales, but "Service" is the real seller. Premium coupons, bargain sales and art prices, together with competition, formerly did the work, but these methods are fast disappearing.

By means of selling "Service," being courteous to our customers and our acquaintances, our company and its employees have built up a name which means "Good goods at good prices."

A man entering business is doing so for the purpose of profit. When he wants light, heat, power or water, like all other commodities, he expects to pay a fair price. But where shall he get it? Now, here comes in the Service. Naturally, "Pacific Service" comes to his thought—why? Because he has experienced our service and method and knows them, even values them as he would the sterling mark on silverware. He thinks of his many acquaintances connected with our large organization, and of his previous pleasant transactions.

These matters are what is bringing to us our many voluntary orders for additional business, absolutely unsolicited. One man who has just completed a commercial building downtown, writes:
"Dear Mr. ———:

"Cold days are approaching and I know we are not going to be able to keep warm without your steam. Will you please take the necessary steps to accommodate us?" etc.

During the recent water famine the East Bay Water Company said, "Help us." We did, to the extent of 2500 horse-

power in pumping.

Shuckle Canning Company said: "We have packing orders from Uncle Sam and we need 50 horsepower from YOU at once."

V. K. Sturges, tire manufacturer, has orders to ship large quantities of tires to the Islands, and took on 800 H. P.

American Can Company, 175 horse-

power.

Hanlon Shipyards took on 800 additional horsepower.

Best Manufacturing Company took on 100 additional horsepower.

City of Oakland Municipal Wharf took on 37½ horsepower.

ALL BECAUSE SERVICE SELLS!

In the six months just passed, Alameda County has taken on 1071 domestic electric consumers, and 839 domestic gas consumers.

SOME SALES!

IN MEMORIAM

Influenza has claimed the following faithful and valued employees from our ranks:

October 28th, Miss A. L. Olofson, Bill-

ing Department.

November 4th, Fred P. Valente, Station "C."

November 8th, T. Campy, garage. Deeply lamented.

Solano District

When Dixon was notified that its quota in the Fourth Liberty Loan Campaign was \$265,000 it threw up its hands in consternation. Considerable difficulty had been experienced in raising \$140,000 required in the third campaign, and with an increase of nearly one hundred per cent the task appeared hard indeed. However, when the drive started the usual efforts were put forth, and by October 14th \$160,000 had been subscribed. With only five days to go this was a long way from

the goal; those in charge of the drive realized that heroic measures were necessary, so the assistance of the Dixon

Liberty League was asked.

The League placed the matter in the hands of its executive committee and the committee got down to business at once. Its first move was to increase its membership to twenty. Then it went over its card index which contained all the bond and war activity records of some 800 potential subscribers of the community. As a result of this investigation it was found that 220 persons had not done their duty in the opinion of the committee. A circular letter was mailed to these delinquents on the morning of the 15th, calling their attention to the situation in pretty direct terms, as witness the following excerpts:

"The Executive Committee of the Liberty League of Dixon begs to inform you, that it believes you are able to increase your purchase of Fourth Liberty Bonds to the total amount of \$...........

"You are therefore directed to purchase this amount of bonds or appear before the Committee, which will be in session at the Chamber of Commerce room in Dixon all the afternoon of Thursday, October 17th, and explain why you cannot do so. If you do not buy or report as above, the League will feel at liberty to list your name among the slackers, which will be made public, and Public Opinion under the circumstances shows no mercy.

"Some of our people have persistently failed and refused during the former loan campaigns and still fail and refuse to respond to this, and there are others with adequate means who have subscribed just enough to "get by" and wear a button. Therefore, that all should do their just part commensurate with their ability this notice is being sent out to those who are still derelict in their high obligations.

"Other localities have had to take similar action, and Dixon Liberty League proposes to do its duty on the high ground of patriotism to the end that there be no escape for the slacker. In this spirit the explanation of those who cannot increase their amount will be received and duly weighed, after which action will be taken accordingly."

Subscriptions came in with a rush shortly after the letters had gone forth, and by the afternoon of the 19th Dixon had the sum of \$284,000 to its credit, and now flies its four-barred flag.

True to its declaration, the committee published the names of those who did not respond to its requests, but there were only ten of them.

C. E. SEDGWICK.

Santa Rosa District

Santa Rosa District won a 100% Fourth Liberty Loan banner for employees' subscriptions. Santa Rosa went over its quota on the loan in the face of heavy damage to the crops by the rains, also the fact that two banks out of five were closed, i. e., the Santa Rosa National and the Union Trust Savings, which is a subsidiary of the National.

Percy B. Hanson, formerly salesman of Santa Rosa District, has been greeting his old friends, being home on a furlough. Mr. Hanson was called to the colors last December, and has been stationed on guard duty in New York harbor for some time past, with headquarters on the U. S. S. "Adams." He returned East on Friday, October 25th. A surprise party had been planned for him by the employees of the district, but owing to the Spanish influenza epidemic, the party was postponed until his next furlough.

M. G. HALL.

Vallejo District

The Clinton Construction Company, which has been awarded the contract for the big bridge that will connect Mare Island and Vallejo near Tenn Street, better known now as the Georgetown Government Annex, is going ahead in earnest on the big job. Several pile drivers are now at work and the contractors are of the opinion that the bascule bridge will be ready by the first of the year.

A new \$42,000 cafeteria is to be built at Mare Island by Contractor O. C. Holt. The Littlefield Company is furnishing the kitchen equipment for the building.

Quite an exciting skirmish took place in Vallejo on the 25th of October when one of the Republic trucks of the San Francisco District, working at the Government Annex, suddenly disappeared. All avenues of escape were looked to and the telephones were kept busy, but next day the machine was back in place as if nothing out of the ordinary had happened, much to the relief of the driver.

A garage man had taken it in for repairs by mistake.

Several cases of gas meters were delivered at the Government Annex site, which would indicate that there will be "some" gas used there.

A. J. STEPHENS.

Fresno District

Mr. M. L. Neely, manager of the company's Fresno District, was appointed chairman of the United War Work Campaign for Fresno County, by Mr. Chas. C. Moore, director of the State Council of Defense.

San Joaquin District

IN MEMORIAM

Mr. H. A. Tyler, an employee of the company at Herdlyn, was taken ill on October 15th with influenza, which rapidly developed into pneumonia. He was removed to Dameron's Hospital in Stockton a few days later and died on the morning of October 22d. The remains were removed by his relatives to San Francisco for burial.

Sacramento District

VICIOUS LEGISLATION

Editorial in the Sacramento Sunday News October 11, 1918.

It should be the duty of the governing body of the city to treat with fairness the components of the municipality, whether they be corporations or individuals. The purpose of the legislative branch should be to make just laws, regardless of whether they affect individuals or corporations. But when the legislative body of a city uses law-making power as a club to force either an individual or a corporation into line, it is overstepping the limits of just legislation and at once becomes unfair, autocratic and positively vicious. This is exactly what the City Commission has done in repealing the jitney ordinance. It has used this measure to browbeat the Pacific Gas & Electric Company, merely because that company has applied to the State Railroad Commission for an investigation of its affairs to determine whether or not it is entitled to a six-cent fare in Sacramento, which it has a legal right to do.

The Sunday News does not stand sponsor for the acts of the Pacific Gas & Electric Company, but it frankly states that this corporation in its dealings with the public has for the most part been reasonable and fair. However, the general reputation of the company does not enter into the matter under discussion. The proposition simply is this: a corporation is being punished by the governing board of the city for availing itself of rights as permitted by law.

There are many reasons why the jitney ordinance should not have been repealed. The first is, there is no demand on the part of the public for jitneys. Jitneys were tried out here and were a nuisance. Jitney drivers are flagrant violators of traffic laws; jitney service is at best poor, as it is available to citizens only during the busy hours of the day; jitneys pay no tax to the city on their receipts, as does the street car company; they pay no franchise tax; they use the streets without bearing a share of their upkeep.

Secondly, jitneys are unfair competition to the street car companies. companies operate under franchises which entail certain obligations on the part of the grantee, such as upkeep of streets, scheduled service, permanency of service during the life of the franchise, etc. No such obligations are required of jitneys. The jitney is a parasite, and cannot exist except on streets where there is established service. All jitneys that have tried to operate on streets where there is no car service have failed.

Thirdly, jitneys are an unnecessary duplication of service, and for this reason alone should be prohibited at present during the scarcity of labor for necessary work. The United States Government War Industries Board requests the public to eliminate unnecessary duplications wherever possible, so as to release men for needed occupations, but here in Sacramento our City Commissioners are undoing what other patriotic communities are doing by making it possible for men who could be useful elsewhere to engage in the unneeded jitney business.

Fourthly, the jitney ordinance and the six-cent fare proposal are entirely different matters, and should be considered separately and each upon its own merits.

In applying to the Railroad Commission for an investigation of its financial affairs with the object in view of increasing its fare, the street car company is acting within its legal rights. Every one knows that no business where a great amount of labor is employed can be operated as cheaply today as it could several years Commissioner Carmichael, whose private business is insurance, knows that a ten per cent surtax has been added to all fire insurance policies because of increased costs. Commissioner Coulter, who is a farmer, knows that the cost of producing farm products has increased tremendously during the past few years. Dr. Simmons knows that the price of drugs has gone skyward, and Commissioners Turner and Haynes know that the cost of living has about doubled in four years' time. Indeed, the city taxpayers know, too, that the cost of government has gone up, as shown by their tax bills, and one of the reasons given therefor is the increased cost of material and labor.

The street car company has also had to meet increased costs, and if investigation by the Railroad Commission shows, because of that fact, that it is entitled to a six-cent carfare, it should be permitted to charge that amount, and not beaten into financial distress by an unwise, unjust and unnecessary jitney ordinance.

Yolo District

\$8,000,000 CROP IS SUTTER BASIN GOAL

General Manager Maddox Plans to Raise Year's Rations for 70,000 Soldiers

Through the installation of an irrigation system, expenditures upon which this season will total upwards of \$400,000, the Sutter Basin Company expects to greatly increase its output of food next season.

"Next year we will have every acre in the district under cultivation," said General Manager George S. Maddox. "Our goal will be around 66,000 tons of food, valued at nearly \$8,000,000, and enough to feed 70,000 or 75,000 soldiers for a year.

"Most of the area will be in beans and rice. This year we have more than 30,000 acres in beans, and we are planning on putting 9000 acres in rice next season. The irrigation system will make the rice planting possible."

The irrigation system will include six forty-two inch centrifugal pumps, which will lift water from the river, and a headworks, which will cost about \$120,000. Only a part of the works will be completed in time for next season.—Sacramento Bee, Oct. 26, 1918.

A line has been built to this plant

which, for the present, will be used only in connection with construction work.

J. W. Coons.

San Francisco District

In order to take care of the increase in capacity of the stations located centrally to Market Street a 1000-kw. motor-generator set has been moved from old Station E at Vermont and Mariposa Streets to Station I at Eighth and Mission Streets.

Work has been started transferring the series arc street lighting circuits from Station A to Stations E and H.

The changing of arc lamps to mazda refractor units has made it possible to eliminate several circuits.

Employees of the San Francisco District subscribed \$72,600 to the Fourth Liberty Loan. This represents the subscriptions of 988 out of 1205 employees, or 82%, and is well worthy of note. The offices of the District Manager, Assistant Secretary, Collection and Electric Sales Departments went "over the top" one hundred per cent.

IN MEMORIAM

With deep regret we have to record the passing, during the month of October, of the following loyal employees of San Francisco District, victims of the influenza epidemic. Their loss is keenly felt, and the sympathy of all their fellowworkers is extended to their bereaved relatives.

Norman Campbell, construction man at Station "A," entered the company's service on August 2, 1911, and worked continuously up to the time of his fatal illness. He leaves a wife to mourn his loss.

Andrew Kirk, oiler at Station "A," entered the service of the company on September 20, 1917. A wife and five children are left to mourn his loss.

James F. Einfeldt, trimmer, entered the company's service on July 7, 1913. He leaves a wife and two children.

Geo. W. Jones, laborer, in the Steam Distribution Department, entered the service of the company on May 15 of this year. He is survived by his widow.

Dudley Tudor Davis, statement taker, was employed by the company since December 27, 1907. Faithful and conscientious, he was a favorite among his

fellow-workers and loyal to the interests of the company.

Miss Eva Giavanoni, of the District Auditing Department, entered the employ of the company on February 12, 1915, since which time she had been a faithful and loyal worker. Her sunny personality endeared her to all with whom she was associated, and her happy smile will be missed from the ranks of her fellowworkers.

Head Offices, San Francisco

Communications like the following are appreciated not only for their manifest sincerity but, also, for the good they do in encouraging the spirit that is "Pacific Service":

1776 Bush St., nr. Octavia,

San Francisco, Calif., Nov. 16, 1918. Mr. John A. Britton, Vice-President and General Manager, 445 Sutter Street, San Francisco, California.

Dear Sir:

Acknowledging your esteemed letter of the 15th, I beg to express my appreciative thanks for the prompt and effective attention which you gave to my request for an improvement in the illuminating quality of the gas served by your company, at my office.

Your engineers, Mr. Henderson and Mr. Steele, were most courteous and efficient in their advice and supervision of the work which you directed, and which in its results has gratified and amazed me.

With the Welsbach burners attached to my chandeliers I am now given a better, brighter, and a softer light than I have ever worked under before. I did not dream that it was possible under any circumstances to procure such results from gas.

Nothing gives an appreciative man so much pleasure as to express his appreciation of service well done, and it affords me much pleasure to reiterate in this connection what I said to you at a casual chat in the street car a few months ago, that your company under your administration stands out pre-eminently among public service corporations for unexampled courtesy and efficiency.

Very sincerely yours,

ROBERT P. TROY.

The Second Vice-President and Treasurer's office lost another member when

Mr. R. M. Murgatroyd entered his country's service on November 4, 1918.

Mr. Murgatroyd joined the Coast Artillery Corps, and is now stationed at Fort Winfield Scott. His chief ambition in life was to enter the service in time to see some real action "over there." In this he was disappointed, as he just succeeded in getting under the wire before the close of the war.

He writes that he is greatly pleased with the life at Fort Scott; that the "eats" are first class, but that "kitchen police" is "the bunk." However, the latter duty headquarters attended to their various duties. Then it was found impossible to hold the enthusiasm that was swelling in their hearts and General Manager John A. Britton sent word to all in the building to gather in the street in front. Stalwart Otto Schultz was summoned to bear the Stars and Stripes at the head of the procession, which formed in columns of four. Behind the national emblem marched Messrs. John A. Britton, A. F. Hockenbeamer and D. H. Foote, behind them various heads of departments. The rank and file of "Pacific Service," mainly



The "Pacific Service" parade through the streets of San Francisco on Armistice Day.

will undoubtedly serve as excellent training for some of our young men when, later in life, they join the ranks of the benedicts.

On Armistice Day, November 11th, eight hundred members of the "Pacific Service" family paraded through the streets of San Francisco in honor of the glad news of a world freedom.

The celebration was entirely impromptu. Business opened as usual and for a couple of hours or so employees at

employees in the San Francisco District, men and women, made up a parade that was two blocks long.

The way led from "Pacific Service" building down Powell Street to Market and out Market to Seventh. There the parade counter-marched down Market as far as Montgomery Street and up Post Street to Stockton, and so back to head-quarters. It was a joyous affair from start to finish. Men and women sang patriotic songs and gave back the cheers that greeted them from the passers-by upon the sidewalks.



"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF NOVEMBER 15th, 1918 Total Number 601

BOARD OF DIRECTORS—SAN FRANCISCO Livermore, Capt. Norman B.

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Aklen, Randall Francis
Baugh, Sergt, Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Sergt. Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
†Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.

RAL OFFICES—SAN FRAI
Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Geeil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindblad, Wm. Nathone
Lindstrom, W. J.
McDermott, Louis Wm.
McDonald, Hayward C.
Mel, Lieut. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
Murgatroyd, Robert
Murphy, Lieut. Elmo Neil
Nordling, Wm.

Osborn, Lieut. Norris W. Parker Charles G. Regan, Arthur Rossiter, Sidney Benjamin Rubenstein, Frank Sam Schuster, Lieut. John C. Shaw, S. B. Smith, Cyrus Newell Spinetti, John V. Stevenson, Lieut. Richard H. Sultan, Lieut. Walter D. Terhell, Sergt. Jacques Thomas, G. M. Trowbridge, Capt. Alfred L. Trudrung, Harry Watson, John Wilkins, R. Wilhelm, Clarence Williams, Lieut. Leroy C. Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn., October 14th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry
Anderson, Corpl. Harold M.
Barr, John Milton
Barrett. George
Bates, Byron M.
Belford, William
Bennetts, Herman V.
Bertolacci, R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cooper, Walter Haines
Cormack, Douglas Leslie
Cowell, Charles Merritt
Currier, J.
Deuschle, Fred W.
Duceo, Daniel
Dupuoy, Max
Erickson, William
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Gay, Earl D.
Hansen, Sergt. Hans J. Gay, Earl D. Hansen, Sergt. Hans J.

LAMEDA COUNTY DISTRICH Henderson, John Thomas Hendricks, Normal Z. Hindman, J. E. Hoffman, E. J. Hoffman, E. J. Hughes, William C. Hunt, Lieut. Malcolm L. Jacobs, Sergt. Edward Jenkins, Harry R. Jensen, Chas. Christian Jones, Sergt. Ivor Keesling, Lieut. Homer Grant Kendrick, Eldon W. Klinefelter. Sam Knopla, Charles Knott, Chas. E. Larson, Harry Larue, Chester Walton Longo, Michael Luce, Sergt. George L. Maslin, Lieut. Francis I. Massoni, Dante McKenzie, Malcolm M. Mills, Leon A. Morrill. Corpl. Lloyd M. Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, George A.
Nelson, Norcal

Oswald, James
Parsons, James
Parsons, James
Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Frederick J.
Sprott, Bryan Oswald, James Southerland, Frederick 3.
Sprott, Bryan
Stephens, Alden Raymond
Thompson, Clark C.
Veirs, Harry D., Jr.
Wagner, Ralph Otto
Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

Curtis Ray E.

Andrews, Crist C. Broyles, George R. Hale, Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Raymond Carrol Dusenberry, H. H. Hinds, Perry Mare

Allen, Robert Grady Altheter, Chas. E. Beaumont, Floyd Burton Boyd, William Thomas Compton, John A.

CHICO DISTRICT

COLGATE DISTRICT

Hunt, Edward C. Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoe

CONTRA COSTA DISTRICT Knight, Lieut. Remi Chabot Matheron, Frank Mellerup, Fred H.

DE SABLA DISTRICT Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Truitt, James O.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W.

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James. Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Brown, Ira A.
Burkleo, Dan
Butterworth, William Z.
Gorlew, Harland Hall
Devlin, John A., Jr.
Downing, Robert W.
Gomes, Carl

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

DRUM DISTRICT

Johnson, Samuel T. Lohse, Lieut. Marcel P.

ELECTRA DISTRICT

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold Newland, Fred Walton

MARIN DISTRICT

Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Chester H.
Hefner, Joseph Philip
Holdridge, H. Earl
Holmgren, J. E.
Hubbard, Sergt. H. W.

Johnson, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander
McKenzie, Grover Clarence

Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. G. J. Shearer, Ensign William Young, Joseph P.

Snow, Wilbur Roland

NAPA DISTRICT

Mayfield, James M. Osborne, Lieut. Butler J. Gash, Lieut. Frank Taylor

NEVADA DISTRICT

Snell, Verne C. Richards, James Beloud, Leon C. Earl, George

Taylor, Albert P. Taylor, Lieut. Cary P.

Meservey, Charlea A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Patterson, Sergt. A. Earl

Fatterson, Sergt. A. Ear Ryan, R. Stearns, O. J. Stearns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

PETALUMA DISTRICT

Beveridge, James

Fairchilds, John H. PLACER DISTRICT

> Johnson, Hjalmar Kirkpatrick, G. B. Laughlin, Burton E. Likely, Lieut. R. D. Likely, H. E.

Lundquist, Leonard L. Mengel, Henry Peers, G. A.

Kent, James Cody

Leary, Jerry

Sutcliffe, Lieut. Harold T

Raynard, Duncan Sampson, L. E. Sebben, J. E. Smith, Corpl. R. F. Strofeld, George Thane, Alexander Uhlenberg, Louis H.

Yost, Charles Z.

REDWOOD DISTRICT Deloy, H. Fulton, Lieut. L. J. Haaker, Frank Haines, G. V. Harcourt, J. R. Hiestand, C. R. Hocking, Thomas J. Hoffman, Andrew P. Jennings, Edward J.

Anderson, W. O.
Boulware, Wm. F.
Bryggman, Emil W.
Budalich, Oialy A.
Gaussou, Jean
Casey, T.
Chase, Corpl. H. A
Clausen, J. J.
Cullen, John P.

Anderson, John L. Anderson, Wm. Elmer Baker, Joseph Baugh, R. W. Belluomini, Primo J. Bigelow, Ernest C. Brady, Theodore Brewster, G. V. Brown, Jay G. Busses, George D. Cameron, John

Beeler, Joseph J. Black, Marion Derr, Harvey

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt Harold S.
Francouer, Raymond J.
Gewirtz, A.

SACRAMENTO DISTRICT Mathews, Maurice L. Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Newington, David
O'Connor, Edward T.
Olsen, Albert
Raymond, Harold A.
Richeson, Merle C.
Riggles, R. F.

Goyle, William Doyle Grandall, Geo. H. Daigle, John M. Dick, Silas S. France, Fred Rhodes Hochderffer, W. E. Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan, Raymond M. SACRAMENTO SUPPLY DISTRICT

Dyer, John B. Jones, Verne H. Kinz, William J.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter Haiden, Walter Internan, R. Jacobsen, Earl D. Keating, Arthur Edward Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
Suggett, Archie Dean

Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Lindsey, Elroy M. Murphy, Thomas J.
Suters, F. X.
Wilson, Herhert F.
Wilson, Reginald St. Clair

SAN FRANCISCO DISTRICT-Concluded.

COLLECTION DEPARTMENT Collins, Geo. Washington Fitzgerald, Paul

O'Connor, Charles A. Oliver, Adrian Pierce

COMMERCIAL DEPARTMENT

Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

Shea, Cornelius Thomas Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Lieut. Guy A.
Beatie, Gerald
Biehl, Lieut. P. F.
Boccignone, Dominico
Brady, George B.
Brady, George B. Boccignone, Dominico Brady, George B. Burnett, Walter Butler, Sergt. Harry E. Campbell, Sergt. M. F. Clark, Lyle G. Cook, Frank L. Cook, Joseph Crompton, Walter James Daley, Lieut. Robert Davidson, David Dodge, Chas. P. Donovan. Patrick Donovan, Patrick Drew, Harold Durand, Milton J. Eichbaum, Sergt. C. W., Jr.

ELECTRICAL DEPARTMENT Ellis, Clarence L.

Estes, Sergt. Melville N. Fogalsang, W. J. Fowler, E. H. Funk, William Funk, William
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerber, Harold
Gilbert, Paul H.
Glasson, Pearce
Griffin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hildebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy. Donald S.
Kobylinski, Walter
Killed in an accident in Fran Locks, Herman J., Jr.
Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Ogilvie, Clarence H.
Ostrowski, Ray
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F.
Shields, Garrison F.
e, September 17th, 1918. Locks, Herman J., Jr.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Lieut. R. D.
Stohler, Adolph
Sundberg, Emil
Sweeney Michael
Szczepanski, Edgar M.
*Thompson, Capt. A. R.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
†Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Waters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action in France on or about October 5th, 1918.

GAS DISTRIBUTION DEPARTMENT

*Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

GAS MANUFACTURING DEPARTMENT

RECORDS DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Hanley, Leo J.

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice

Hughes, Percy Anthony

McDonald, Wm. John

Abercrombe, Corpl. Donald Andresen, Corp. Carl. Blair, Walter B. Clark, Richard Clark, William

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John Lang, R. T.

Carroll, Louis

Coyle, Dan K.

SAN FRANCISCO SUPPLY DISTRICT McCarthy, John McNab, Hugh D. Merlinjones, Clarence Newman, Ray J.

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L.

SAN JOAQUIN DISTRICT

Faight, Corpl. Forrest W. Flint, Sergt. Arthur P.

Hunt, Lieut. Herbert Tevis Martin, Lieut. David G. McIsaac, Dan Olsen, Melvin L. Riley, Norman Sidney Young, C. Cuyler

SAN JOSE DISTRICT

Argall, Marsden Stratton Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Heury Edward Burns, Leo Burns, Raymond J. Caldwell, Lieut. Edward F. Candello, Lorenzo

Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Jensen, Elmer D.
Johnson, Capt. Carl B.
Kiely, Wm. P. Jr.
Kulish, John J., Jr.
MacGregor, Owen L.
Maxwell, Merritte M.
McFarland, Julian
Menzel, Sergt. Robert J. Goyle, Dan K.
Erbentraut, Edwin Otis
Faulkner, Chas. C.
Fiman, Edward F.
Frederickson, J. C.
Frier, George S.
Hale, Lieut. C. St. John

Riesen, Alvin Rowe, Sergt. Ernest W. Roy, Harvey Leon Singleton, Paul Sprung, Lieut. Stanley W. Stojanovich, Tony Suess, Walter R. Tarp, James P. Terry, R. H. Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Hanson, Percy B. Harris, Eli Raymond

Short, Ralph C.

SOLANO DISTRICT

Anderson, Sergt. Frederick E. Moore, George R.

Morgan, Mervin E.

Mix, Francis L.

VALLEJO DISTRICT Argabrite, Lieut. Walter M.

YOLO DISTRICT

Grandquist, K.

Ross, Mervyn F.

Howard, Everett J.

Bischoff, O. E. Boots, Benjamin

PACIFIC GAS AND ELECTRIC COMPANY

A CALIFORNIA CORPORATION

Managed by Californians

Operated by Californians

"PACIFIC SERVICE" REPRESENTS

4,738 employees in all departments.

\$134,000,000 capital invested in gas, electricity, railroads and water plants.

37,775 square miles of territory in which it operates.

8,100 stockholders.

32 counties of the State in which it transacts business.

450,657 consumers served with gas, electricity, water and steam as of Dec. 31st, 1917.

1,803,108 people served in 32 counties.

178 cities and towns in which it transacts business.

\$5,750,000 annual wages paid employees in 1917.

\$1,017,099 taxes paid to the State of California in 1917.

\$236,140 taxes paid to the Federal Government in 1917.

164,075 horsepower developed in 14 electric water-power plants.

106,568 horsepower developed in 3 electric steam plants.

270,643 total horsepower developed in 17 plants.

587,144,061 k. w. hrs. sold in 1917.

8,537,925,100 cubic feet of gas sold in 1917.

18 gas plants.

30,000 miles of wire used in distributing electricity.

2,878.6 miles of mains used in distributing gas.

835 miles of mains and ditches used in distributing water.

700 miles of track of street railways operated and supplied with power.

47,858,362,262 gallons of water stored in 70 lakes and reservoirs. This amount of water would supply the city of San Francisco for 950 days.

53.672 acres of land owned in California.

2,923,932 barrels of California oil used in 1917.

70,318 horsepower in agricultural motors depending on "Pacific Service."

294,299 horsepower in mining, electric railways, manufacturing and other motors depending on "Pacific Service."

59,216 street lamps, gas and electric, lighted by "Pacific Service"

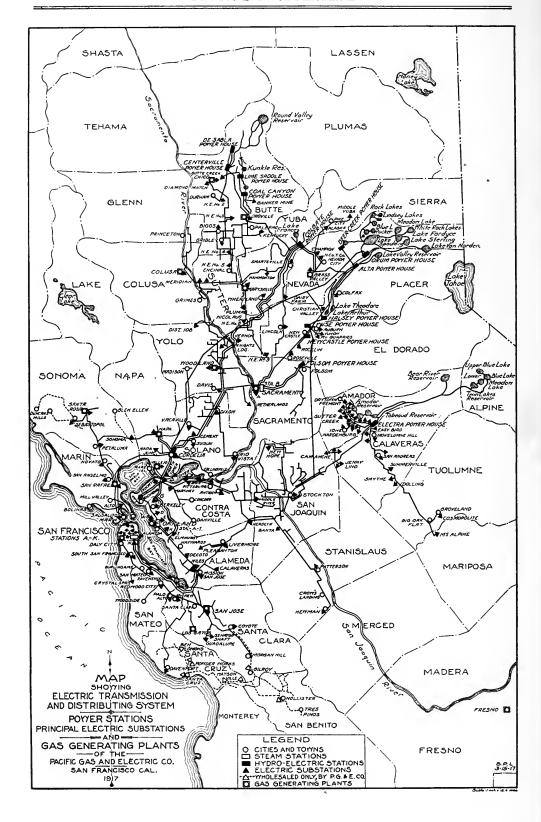
3,983,042 incandescent lamps nightly lighted.

636,855 horsepower connected to system. This represents the equivalent of 5,095,000 men.

PACIFIC GAS AND ELECTRIC COMPANY

Head Office: 445 Sutter Street SAN FRANCISCO

Branches in all principal cities and towns of thirty-two counties in North-Central California



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	INI	DIRECTLY	TOTAL			
	No.	Population	No.		No.	Population		
Electricity	128	1,210,830	48		176	1,343,655		
Gas	51	1,219,690	2		53	1,228,292		
Water (Domestic)	1	57,302 76,000	8	19,300	19 1	76,600 76,000		

		CITIES AND TO	WNS S	ERVED BY COM	PANY:		
Place Por	pulation	Place Pop	ulation		opulation	Place Po	pulation
¹ Alameda	30,000	El Verano	400	MokelumneHill	300	² San Quentin	2,500
Albany	2,300	¹ Emeryville,	3,000	Morgan Hill	750	San Rafael	6.000
Alvarado	700	Esparto	250	Mountain View	2,500	'Santa Clara	6.000
Alviso	550	Fairfax	250	Mt. Eden	210	*Santa Cruz	13,600
*- *Amador City	1,100	Fairfield	1,000	² Napa	6,500	¹ Santa Rosa	11.000
Angel Island	280	Fair Oaks	300	* *Nevada City	2,900	Saratoga	300
Antioch	2,000	*Felton	300	Newark	505	Sausalito	3,000
Aptos	300	Folsom	2,000	Newcastle	950	2Sebastopol	1.950
Atherton	250	Forestville	225	Newman	1,200	Shellville	200
5-6Auburn	2,800	¹ Fresno	48,867	Niles	1,000	Sheridan	250
Barber	500	Gilroy	2,900	Novato	400	Smartsville	300
² Belmont	375	Glen Ellen	900	² Oakland	225,000	*Soquel	400
Belvedere	550	2-5Grass Valley	5,200	Oakley	200	*Sonoma	1.290
Benicia	2,400	Gridley	1,800	Occidental	600	2South San	
Ben Lomond	800	Grimes	350	*Oroville	5,000	Francisco	3.750
Berkeley	65,000	Groveland	250	Pacheco	250	2-7Stanford Uni-	
Biggs	500	Guerneville	780	²-7Palo Alto	6,000	versity	2,600
Bolinas	200	Hammonton	500	Paradise	500	5_6Stockton	42,000
Broderick	600	² Hayward	4,000	Patterson	500	Suisun	800
² Burlingame	4,000	² Hillsborough	950	Penn Grove	300	Sunol	340
Campbell	700	*Hollister	2,500	Penryn	250	Sunnyvale	1,650
Capitola	275	6-61 one	1,000	Perkins	250	Sutter City	250
Cement Centerville	1,000	1rvington	2.100	² Petaluma	7,500	2_6Sutter Creek	1,300
	850 15,000	6-6Jackson		Piedmont	3,500	Tiburon	350
Chico	500	² Kentfield	500	Pike City	200	Tres Pinos	300
Colfax	1.800	Kenwood	200	Pinole	1,800	⁶ Vacaville	1,250
² Colma ² Colusa	2.000	Knights Land-	400	Pittsburg	6,000	2-6Vallejo	15,500
Concord	850	ing	2.000	Pleasanton	1,500	Vineburg	200
Cordelia	300	² Larkspur ⁸ - ⁸ Lincoln	1,500	Port Costa Redwood City.	1,000 4,200	Walnut Creek.	500
Corte Madera.	350	Live Oak	300	2-6Richmond	16,500	Warm Springs.	200
2-6Cotati	200	Live Oak	2.500	Rio Vista	1.000	Watsonville	6,000
Coyote	200	Lomita Park	450	Rio Vista	900	Wheatland	500
Crockett	3.000	Loomis	450	Rodeo	300	Winters	1.200
Crow's Landing	300	Los Altos	500	4-8Roseville	4.200	Woodland	5,000
² Daly City	5,500	Los Gatos	3,000	*Ross	900	Woodside	225
Danville	400	Madison	250	Sacramento	76.000	Yolo	350
Davenport	300	Mare Island	500	San Andreas	75,000	² Yuba City	1,750
Davis	1.700	Martinez	3,500	San Anselmo	3.000	_	
Decoto	300	Marysville	6.000	San Bruno	1.500	Total Cities	
Dixon	1,200	Mayfield	1,100	San Francisco	580,000	and Towns1.	422 522
Drytown	225	² Menlo Park	1.100	San Jose	45,000	and rowns,	, 122,022
Duncan's Mills	200	Meridian	225	San Juan	550	Add Suburban	
Durham	300	² Millbrae	300	San Leandro	5.000	Population	400,586
5-5Dutch Flat	750	Mills	350	San Lorenzo	400	•	
Eldridge	500	Mill Vallev	3,200	San Martin	200	_	
² - ⁶ El Cerrito	1,200	Milpitas	350	San Mateo	6,000	Total Popula-	
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1.	823,108

Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

Gas, Electricity and Water.
Gas, Elect. and St. Railways.
Electricity and Water.

Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	. 206,582
Number of Gas Consumers	. 252,623
Number of Water Consumers	. 13,052
Number of Steam Consumers	. 449
Total number of consumers	$\overline{.472,706}$

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

VERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y.
Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORE, MD.
Munsey Building
Boston, MASS.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO, ILL. Marine Bank Bank Bank Blog.
CHICAGO, ILL.
137 So. La Salle Street
CINCINNATI, OHIO
FOURTH Natl. Bank Bldg.
FOURTH Natl. Bank Bldg.
Hibernian Building
MINNEAPOLIS, MINN.
McKnight Building

DAYTON, OBIO
Mutual Home Bldg.
DENVER, COLO.
First National Bank Bldg.
THE NATIONAL MARK.

NEW ORLEANS, LA.
301 Baronne Street DETROIT, MICH. 147 Griswold St. HARTFORD, CONN. Conn. Mutual Bldg. INDIANAPOLIS, IND.
Fletcher Sav. & Trust Bdg.
Kansas Citry, Mo.
Republic Building
Republic Building
Republic Building
Republic Building

PHILADELPHIA, PA. 1421 Chestnut Street Pittsburgh, Pa. Farmers Bank Bldg. PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. San Francisco, Cal. 4 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass.
Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W WILKES-BARRE, PA. Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. CROCKER
F. G. Drum

JOHN S. DRUM F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer John D. McKee John A. McCandless C. O. G. Miller Nion R. Tucker George K. Weeks

OFFICERS

											President
JOHN A. BRITTON										•	Vice-President and General Manager
A. F. Hockenbeamer										5	Second Vice-President and Treasurer
D. H. Foote											. Secretary and Assistant Treasurer
Jos. C. Love											Assistant Treasurer
Chas. L. Barrett .											Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM	
W. B. Bosley	iey
R. J. CANTRELL	ent
J. P. Coghlan Manager Claims Departme	\mathbf{ent}
C. P. Cutten Attorney, Rate Departme	ent
K. I. Dazey	ons
P. M. Downing Chief Engineer Electric Departme	ent
E. B. Henley Manager Land Departme	ent
JNO. H. HUNT Purchasing Age	ent
J. P. Jollyman Engineer Electrical Construction	ion
E. C. Jones Chief Engineer Gas Departme	ent
F. S. Myrtle Manager Publicity Departme	ent
L. H. Newbert Manager Commercial Departme	ent
R. R. REIDFORD	tor
Geo. C. Robb	lies
W. G. VINCENT, JR Valuation Engine	eer

DISTRICT MANAGERS

DISTRICT	HEADQUARTERS	MANAGER
Alameda County	Oakland	F. A. Leach, Jr.
Снісо	Chico	H. B. Heryford
Colgate	. Colgate	. Miles Werry
Contra Costa	Martinez	Don C. Ray
De Sabla	De Sabla	. I. B. Adams
Drum	Colfax	. James Martin
Electra	Electra	W. E. Eskew
Fresno	. Fresno	M. L. NEELY
Marin	San Rafael (Actin	ng) H. G. RIDGWAY
Marysville	Marysville	. E. C. Johnson
Napa	Napa	C. D. Clark
Nevada	Nevada City	. L. H. Hartsock
Petaluma	Petaluma	H. WEBER
Placer	East Auburn	. H. M. Cooper
Redwood	. Redwood City	E. W. FLORENCE
SACRAMENTO	Sacramento	C. W. McKillip
San Francisco	San Francisco	Henry Bostwick
San Joaquin	Stockton	J. W. HALL
San Jose	San Jose	J. D. Kuster
Santa Rosa	Santa Rosa	. M. G. HALL
Solano	Dixon	. C. E. Sedgwick
Vallejo	Vallejo	. A. J. Stephens
Yolo	Woodland	J. W. Coons

Pacific Service Magazine

Volume X



Number 7

Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for December, 1918

•	•	•	•		F_{I}	on	tisp	iece
	Jo	hn	A.	B	rit	ton		195
E ·	A.	W	. F.					197
<i>!-</i>	F.	s.	Му	rtl	le			202
	B_{ξ}	jΗ	im	sel	f			209
								212
	A.	F.F	Нос	cke	nb	ear	ner	215
G 					•		. 2	16-7
)-								
								220
F								220 223
.1		. Jo . A F Bu	. John . A. W . F. S By H A.F.I	John A. A. W. F. F. S. My By Him A.F.Hoo	John A. B A. W. F. F. S. Myrth By Himsel A.F.Hocke	John A. Brite A. W. F. F. S. Myrtle By Himself A.F. Hockenb	John A. Britton A. W. F F. S. Myrtle . By Himself . A.F.Hockenbean	A. W. F

Index to Advertisers

Allis-Chalmers Mfg. Co	iii	Sprague Meter Co	i١
Chaplin-Fulton Mfg. Co		Standard Underground Cable Co	
General Electric Co	i	Steiger & Kerr Stove & Foundry Co	
General Gas Light Co	ν	Welshach Company)1
National City Company 4th page co	ver	Western Pipe & Steel Co. of California	3/
Pacific Meter Co		Westinghouse Electric & Mfg. Co	
Pelton Water Wheel Co	iv	Wood, R. D., & Co	1



1918



ON EARTH PEACE



The Message Of The Nations

I.E. BALSIEY

PACIFIC SERVICE MAGAZINE

Volume X

DECEMBER, 1918

Number 7

"Glory to God in the Highest, and on Earth Peace, Good Will Toward Men"



When to the troubled waters the Master's voice exclaimed "Peace! be still," the tempest ceased.

So, again the Master's voice has spoken; the dread carnage of war has ceased, and death, destruction and devastation no longer rule. The embattled hosts are still, and, Thank God! we may again exclaim

Merry Christmas and Happy New Year!

Nineteen Hundred and Eighteen---what potent meaning those figures have, and what a whirl of memories they wake, of adventures by land and sea, of devotion, of sacrifice, of Victory.

On the fields of battle, mingled with the blood of crushed yet Valiant Belgium, of intrepid and unafraid France, of indomitable England, of fearless Italy, is the blood of America shed in the cause of right. Once more the seas, the earth and sky are free, and marching hosts of the Allied armies are restoring peacefully to those who were held in bondage the lands of their forefathers. "All Glory to the Lord of Hosts from whom all glories are."

We of America are proud of the service rendered by our Army and Navy----proud of the men who upheld the traditions of our flag, proud of that spirit to do and to die in defense of the principles of honor and of justice.

To those of "Pacific Service" who enlisted in that higher and nobler service, Hail! To those who made the eternal sacrifice, Hail! and Farewell! Their deeds will not be forgotten and their sacrifices will not have been in vain.

May the God of Peace so direct and govern this Universe that there shall be such Peace among all nations as shall cause swords to be turned into ploughshares and spears into pruning hooks; so that in the ages to come nations shall not lift up swords against nations, neither shall they learn war any more.

San Francisco, Christmas, 1918.

Vice Printer My Yen

Stranded on Border Ruffian; a Tale of the Blue Lakes in Midwinter

By A. W. F.

Under the above initials the writer of the following interesting narrative of a midwinter trip over the highest traveled ridges of the Sierra Nevada seeks to hide his—or her—identity. Those sufficiently curious to follow the mystery to the end might find it worth while to communicate with Mr. W. S. Coyan, the Pacific Gas and Electric Company's caretaker at Blue Lakes, in Alpine County. To him we are indebted for the story and to him we leave the issue.—Editor Pacific Service Magazine.

THREE anxious pairs of eyes gazed intently on the rugged mountains of Alpine County one December evening in Markleeville, wondering if the low-hung clouds would pass away so that at break of dawn the bright sun would kiss the snow-capped peaks. For, if the weather cleared, with the bright December morning three pairs of snowshoes would point their noses toward Blue Lakes.

Now and then a shower of mingled snow and rain would play patter-patter on the windows of Koenig's Hotel. Hopeful, yet uncertain, the three weary wanderers laid their tired heads on the soft pillows and were soon wrapped in the arms of Morpheus, oblivious to the rapidly departing clouds, far too weary to awaken till the gruff voice of Koenig announced that the morning meal was steaming hot and that Jupiter Pluvius had made himself scarce and God's sunshine spread its rays over Nigger Head Peak.

Hastily the two rough mountaineers and the young tenderfoot, but recently from the pine-clad hills of Maine, made their

toilet and, full of excitement, ate rapidly of the delicious breakfast served by the wife of the hotel proprietor. Then, taking with them the wherewithal to provide against possible famine, the lively trio snapped the buckles of their heel straps and, in line like a caravan, pushed their newly-doped snowshoes toward the rugged mountains looming thousands

of feet above a dark, silent background. The huge nature-shaped boulders looked defiantly upon the three pieces of mere humanity whose cheery smiles and light hearts threw back answers to the distant sighing of the winds.

On and on they went, not stopping for a rest because they were anxious to complete their journey, and the old-timers of Markleeville "allowed as how it was only twelve miles," and what was twelve miles of mountain climbing to these young husky athletic chaps? About two hours had slipped away when the older of the three called for a halt, as he had closely watched the tenderfoot, who, though plucky, was beginning to show signs of fatigue. After resting a few moments the journey was resumed with renewed vigor and slowly they pushed onward and upward, and it seemed as if the lighter air had already played havoc with the young trio, who were puffing like so many engines.

"I wonder how far we are from Markleeville?" asked Charlie; and they paused



Climbing Border Ruffian, one of the loftiest ridges of the Sierra Nevada.



Over Border Ruffian. The road leading into Blue Lakes.

and looked back and, lo and behold, below them in the valley faint specks of diminutive buildings showed them that the queer little town of Markleeville, their starting point of that morning, was still in sight. A glance at the heavens told them that it would soon be noon, as the sun was beating straight down upon them. "We must make better time or we won't eat supper with 'Bill' tonight," said Fitz; for they were going to stay the winter with "Bill" amid the Blue Lakes, where the snowshoe print of human beings seldom ruffled the white carpet of nature.

Again they slid on noiselessly through the trees, when suddenly a sly coyote crossed their trail with a low hungry growl and disappeared into the wood unharmed. A murmur of disgust caused the two mountaineers to turn and George called to the youngest of the party, who had but recently left his happy home and

friends behind him to try his luck in Caliinquired fornia, a n d what the trouble was. Too peeved to answer, Charlie, standing to his hips in snow, held the snowshoes aloft and roughly exclaimed that his feet would not stay in the straps; but after some persuasion the youth again placed his feet in the straps and

walked side-hill fashion. After repeated rests the party gained the crest of Thornberg Canyon, tired and hungry, and praying that they had at least covered half the journey.

Shading their eyes all looked in vain for some signs of civilization. Whispering in the ear of Fitz, so as not to discourage the tired youngster, George remarked, "I don't think we're going to make it tonight," and Fitz readily agreed with him, but he kept up his cheery outer appearance and said, "Boys, we're doing fine." "Have we got much more climbing to do?" came from the young tenderfoot, and the leader answered, "No, only a couple more deep ones," and they dragged on across the ridge. Soon again the uphill performance began, and it seemed as though each rise was decidedly steeper than the one before.

Bang! the heel strap of Fitz's ski had

broken and crossing the opposite shoe had sent the rider headlong, and before any one could what happened think had sailed backward into the canyon from which the rider had just emerged. All watched its downward course, fully expecting to see it crash into the trunk of a fir and smash to pieces, but Dame Fortune played an important part here and



Typical rock formation, Charity Valley.

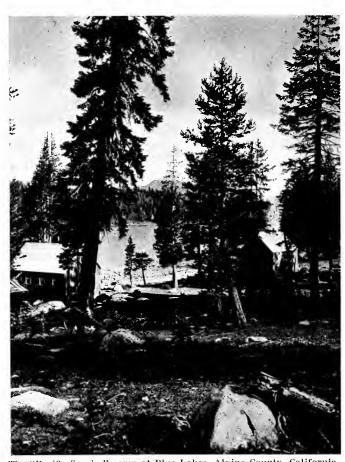
a huge limb which had been broken off in a recent storm blocked its path, held it fast, the broken strap winding itself about the branch. Thoroughly disgusted the owner plowed his way through the snow, which was getting deeper and deeper, back to his runaway ski, and in course of an hour again joined his com-

rades, who were holding council to determine whether or not they should eat the scanty lunch they had brought with them. Informing them that the hour was getting late and, according to the almanac, there was no moonlight, Fitz finally convinced the debaters that they had better keep moving toward Border Ruffian, where he had heard there was an old sheepherder's cabin at which they could possibly kindle a fire and keep warm for the night, for the wind was already moaning wildly through the branches of the fir trees.

Having eaten snow all the afternoon to quench their thirst it had created a burning within them, and with the hunger which was gnawing at their stomachs a sickening feeling had come upon all. Their feet,

which were wringing wet, were now feeling numb as the sun was rapidly sinking in the west. Their legs were getting more weary and the question was "Will Charlie make another mile?" The eyes of the elder watched the boy closely while the trail made by the leader became more and more indistinct. A shrill yell from the leader announced they had reached the top of Border Ruffian, and gazing through the semi-darkness they could see what

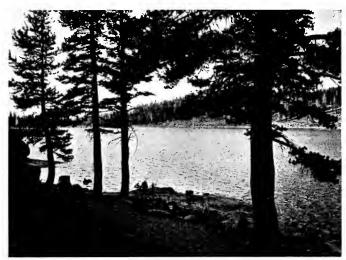
they thought was the dim outline of a cabin. Hurrying on as rapidly as possible under the conditions, for all were now suffering from hunger and cold, they reached what was surely enough a cabin nearly buried by the snow. Soon the door was found, but the snow had drifted in and their immediate efforts



The "Pacific Service" camp at Blue Lakes, Alpine County, California. Situated upon the shores of Lower Blue Lake.

to pry it open met with stout resistance.

Knocking the snowdrift with their numbed feet they soon had a hole dug, and by pulling and tugging they opened the door barely enough to gain entrance; once inside they struck a match, anxious to find out if there were any dry wood inside. There was no wood, but a table and bench stood there by a fireplace and it took but a few moments to smash the stool over the table and another moment



Lower Blue Lake, from a shady corner of the shore.

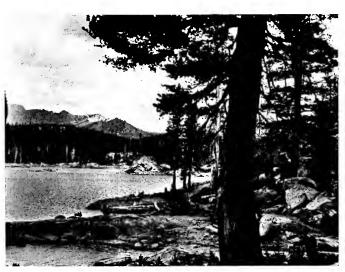
to kindle a fire; but the cold, tired, hungry youths had forgotten to see if the chimney to the fireplace was open, so in a short space of time the little cabin was filled with smoke. What was the trouble? Drawing on wet socks and high-top boots all squeezed out of the partly opened door to find that a huge drift of snow had enveloped the chimney. Taking snowshoes all began scraping the snow away, and when the smoke began pouring out of the hole the trio again went inside, only to find that the largest portion of the snow had fallen inside and had smothered the

nice warm fire. Patience was nearly exhausted and all came to the conclusion that luck was going against them. But. Try once more! was the motto of George, and after a while a fire was blazing in the fireplace and the cold feet felt pinand-needle prickly, so they knew that they would soon be feeling better. Then a can of beans and some crackers were produced and each ate wolfishly, yet watching that none took more

than his share. Once it seemed as if the tenderfoot was going to cry, for he dropped a whole bean from one of his crackers, and although he looked long and eagerly he could not find it. It didn't take long to devour what little lunch there was, and then the work of breaking up what loose wood there was left was in order. There was found enough wood to last until daylight.

Coffee, no one knew how old, was resurrected from an old box and that helped to fill up the stomachs. After Charlie tasted it he said he didn't think he wanted

any. Sparingly the wood was placed on the fire and each said he felt warm; but none was sweating. Stories of similar episodes were told by the two mountaineers, and then came the turn of the Easterner, and, strange to say, he unfolded a tale which he probably imagined was true and none cared to wreck his imagination. While in the midst of his weird tale a huge woodrat, inhaling the odor of the beans, started prancing about and it was with



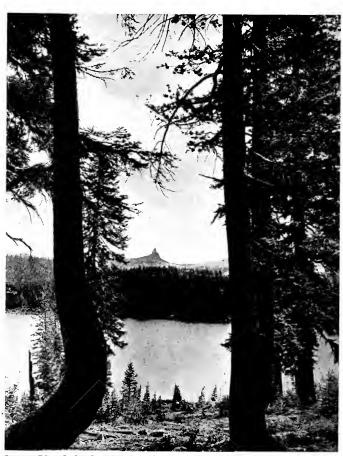
Lower Blue Lake, Round Top Mountain in the distance.

some difficulty that the boy was made to keep his seat as his mind was full of larger animals than woodrats.

Eagerly the travelers watched for daybreak, and with the first sign of it they resumed their journey. Soon they reached the base of Nigger Head Mountain, the highest of them all, and it was

with low spirits the ascent was begun. Hour after hour they climbed straight up and zigzag, and it seemed as though they would never reach the top. A snowflake now and then wafted through the air and all realized a storm was close at hand; and a storm on Nigger Head was like facing death. Moving pluckily onward they kept their course, but the impending storm grew nearer as the mountain top was reached. With a yell of delight which the wind carried through the ravines below, the leader yelled, "We're on top!" and they stood beside the black head-shaped rock. Hearts were getting lighter and stomachs also as they rode, half-carried by the wind, down the side of Nigger Head Mountain on the last lap of the twelve miles.

more welcome person was never seen than was Bill, who stood in the door trying to ascertain at what "Lady" was barking. Snowshoes unstrapped, all clambered into the house, and Bill, who had been lonesome listening to the yell of the wild coyote for long days and nights, soon had roasted duck with oyster dress-

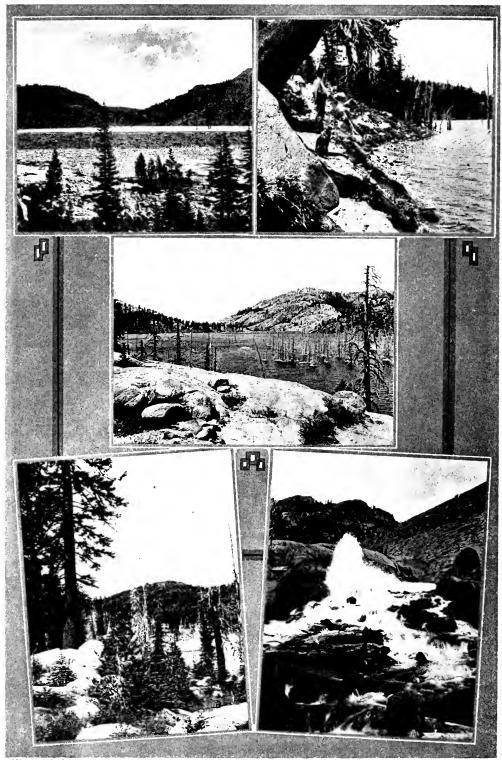


Lower Blue Lake from across the dam, showing Nigger Head Peak in the distance.

Now all was smooth sailing and faces again took on a cheery smile as they thought of the meal they would have when they reached Blue Lakes. A wild bark of a dog, and then in the distance could be seen the gable of Lake View, the home of "Bill the Trapper." But the snowstorm was on in full blast and a

ing on the table. The tenderfoot said he couldn't remember when wild duck tasted quite so good, nor when he had eaten five slices of bread and drunk five cups of coffee at one meal before. When he had finished he candidly told his companions he was hungry when he started, and they all agreed with him.





Views of Meadow Lake, one of the storage reservoirs in the Pacific Gas and Electric Company's Blue Lakes system in Alpine County, California. These lakes furnish the water supply for the Electra power district.

Blue Lakes a Valuable "Pacific Service" Asset

By FREDERICK S. MYRTLE.

The foregoing narrative concerns a section of "Pacific Service" territory which, by reason of its apparent inaccessibility, has received but little exploitation at the hands of the everyday sightseer. Yet the Blue Lakes region possesses innumerable attractions to the lover of the picturesque, and from its health-giving features of fresh air and exercise it is an ideal spot for a summer vacation. It is, as you have read, almost inaccessible in winter; in fact, summer is well advanced before the snows vanish from those tall ridges; but the late summer and early fall form the best season of the year in California, and if the tourist passing over the highway between this and the State of Nevada but knew what reward were his for a slight divergence from the traveled path it is safe to say that the sturdy caretaker at "Pacific Service" headquarters on Lower Blue Lake would have his hands full during that all too brief period of the twelvemonth.

Late in July last it was my great pleasure to pay a visit to the Blue Lakes region in company with Messrs. John A. Britton, P. M. Downing, W. G. Vincent and W. E.

Eskew, all of "Pacific Service," and our guest of honor, Mr. Charles Rollo Peters, the world-famous moonlight painter, who looked for excellent results from a communion with Nature amid the snowwaters and the pines 8000 feet above sea level.

There are three ways to get into Blue Lakes. One, perhaps the best traveled route, is from Reno through Woodfords and Markleeville; another lies over the Placerville grade by way of the Sierra summit and Meyers', a post station at the southern end of Lake Tahoe, while the third, the least traveled by the tourist but the favorite route for our engineers, is by way of Jackson, in Amador County, through Silver Lake and Kirkwood. All three routes converge to a point in Hope Valley, of which more later, and thence the road into Blue Lakes is one and the same.

We chose the route by Placerville, the "Hangtown" of mining days, and leaving there at an early hour in the morning—for Mr. Britton is an early riser and believes in getting his men out on the road by sun-up—we made Meyers' before mid-

From there into dav. Blue Lakes is said to be only twenty-seven miles, yet the trip occupies nearly three hours in a high-powered car. It involves climbing a succession of ridges separating several spacious valleys. The road branches off the highway at the foot of the summit grade and leads through Lake Valley-so called from a small body of water, called Grass Lake, lying in its center-at whose end the first real climb



Upper Blue Lake, above the dam.

begins over a ridge separating Lake Valley from Hope Valley. Just why the pioneers of that region gave it the name of Hope Valley would be difficult to imagine, unless upon the lucus a non lucendo principle. In the center of this plateau several miles in extent the various roads come together. On all sides are mountain ranges. The Placerville grade is out of sight by this time and apparently loftier elevations hem the traveler in. To the left, on the Nevada border, lies the famous Sawtooth Range, charac-

to speak, for it is reached by a lofty flight of steps. The necessity for this arrangement will be seen when Mr. Coyan informs you that in the depth of winter it is no uncommon practice for him to step from the platform outside his front door on to the frozen snow.

Before supper we all hiked over to Upper Blue Lake, a distance of a little over two miles, the way leading along the east shore of Lower Blue and over a rock trail to the farther sheet of water. We had Mr. Lathe, our photographer,



Lower Blue Lake, from the upper end.

teristic indication of the traveler's proximity to the Silver State.

From Hope Valley another ridge is crossed into a valley to which the name of Faith has been given. This negotiated, yet another climb awaits over an elevation that separates Faith from its next in sequence—needless to say, this is called Charity Valley. Then, last of all, comes a strenuous climb up the slopes of Border Ruffian, around the Nipple, as the highest peak is named, and over and down through a pleasant tract of woodland to Lower Blue Lake.

Our party arrived at "Pacific Service" headquarters at the lakeside in midafternoon and were greeted by "Bill" Coyan, the stalwart caretaker, who lives there the year round with his daughter to keep house for him. His residence, like most in that region, is upstairs, so

along with us, and to his efforts we are indebted for the set of views that accompany this article.

The next morning we made the trip to Meadow Lake. The distance is about three miles and the trail leads across the dam at Lower Blue and through a pine forest to Twin Lakes, a now comparatively small body of water, but from which one obtains an excellent view of Raymond Peak and the upper end of Indian Valley on the Nevada side of the landscape. Leaving Twin Lakes the hike is up and down over rock until one descends to Meadow Lake, which lies several hundred feet below the Blue Lakes level. From this the outlet is down the Mokelumne River canyon, through which the water is carried on its way to the great power plant at Electra, some eighty miles to the southwest. The waters from

Blue Lakes pour into the Mokelumne by way of Blue Creek, Deer Valley and the creek of the same name.

It is all, as I have said, wild scenery and picturesque to a degree. There is excellent fishing in the lakes and there is good mountain hiking. Round Top Mountain, Nigger Head Peak and the Nipple are all eminences upwards of 9000 feet above sea level.

It seems appropriate here to give a description of the Blue Lakes region from

shall take the place of oil that is badly needed for other purposes.

The Blue Lakes are a picturesque cluster of storage reservoirs situated in Alpine County near the summit of the Sierra Nevada. They, with Bear River Reservoir in Amador County, are the chief sources of water supply for our company's Electra power district. The Blue Lakes group embraces Upper or West Blue Lake, Lower Blue Lake, Twin Lakes and Meadow Lake.



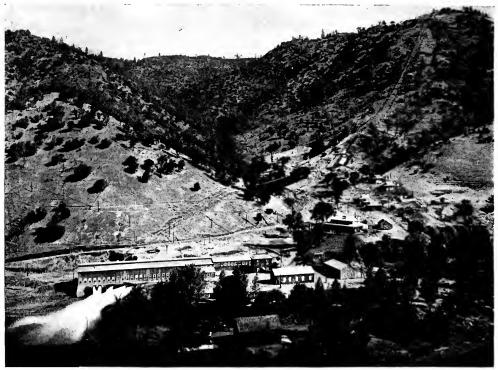
Twin Lakes. Raymond Peak and upper end of Indian Valley in the distance.

the standpoint of water supply for power as well as domestic purposes. The following data should be of general interest at the present time by reason of the State-wide discussion upon the hydroelectric problem, one which is engrossing the attention not only of the power companies but, also, of the United States Government at Washington, with a view to determine how far it will be possible in the near future to turn the snow-waters from California's mountain ranges into account to provide the "white coal" that

Upper Blue Lake is a deep mountain lake of fresh, pure water, situated at an elevation of 8100 feet above sea level. In its original construction it comprised 230 acres, but, in 1901, work was completed on a dam across its outlet which increased the flooded area to 343.5 acres. The capacity of the reservoir is 7700 acre-feet with a catchment area of 1728 acres.

Lower Blue Lake lies two miles south of Upper Blue Lake, which empties into it through a stream having a fall of about ninety feet. The area of Lower Blue Lake is 145 acres, its elevation, at crest of dam, 8040 feet above sea level, and it is confined by a dam 1050 feet in length. The lake has a storage capacity of 4340 acre-feet and a catchment area of 3050 acres, including that of Upper Blue Lake.

Half a mile in a westerly direction from Lower Blue Lake are Twin Lakes, united into a single body of water by a dam at their outlet on the northwesterly side; Lakes, and nearly 450 feet below them in elevation. It was formed by throwing a dam of dry rubble masonry and rock fill 775 feet long across the westerly end of an immense granite basin, otherwise completely surrounded by mountains of great height, thus forming a portion of the route of Meadow Creek, which is a tributary of the North Fork of the Mokelumne River. The drainage area of Meadow Lake comprises 3500 acres, and the lake



The great hydro-electric power plant at Electra, on the Mokelumne River, near Jackson, Amador County. Generator capacity 26,000 horsepower.

their area when full is 118.3 acres, with a watershed of 500 acres. The dam is 1552 feet long, 22 feet high and 42.5 feet wide at the base, this being sufficient to raise the surface of these lakes 20 feet vertically and to develop a storage capacity of 1340 acre-feet. The water is discharged from Twin Lakes into a stream which flows down to Meadow Lake, thence into the north fork of the Mokelumne River.

Meadow Lake is an artificial reservoir about three miles westerly from Twin

floods 141.2 acres with the present 73.5foot dam and has a storage capacity of 6110 acre-feet.

The other source of water supply, Bear River Reservoir, was formed by the building of a dam across the Bear River, which is a tributary of the North Fork of the Mokelumne River, from the north side in Amador County, abutting against the granite walls of the canyon. The drainage area is 28 square miles; storage capacity 6430 acre-feet.

Strictly speaking, the canals supplying



Lake Tabeaud, above Electra Power House.

water for the operation of the Electra System originate in Blue Creek, the outlet of Upper and Lower Blue Lakes. catchment area drained by these two lakes is, by actual survey, 3050 acres, and the surplus water after the lakes are filled is discharged into Blue Creek and flows through Clover Valley to its junction with Deer Creek, thence into the North Fork of the Mokelumne River and down its steep rocky bed for a distance of forty miles, at which point the water is diverted into the Upper Standard Canal, at an elevation of 2400 feet, and a mile farther downstream, into the Amador, or Lower Standard, Canal at an elevation of 2240 feet. For this distance, therefore, the water follows a natural course, and during the dry season of the year the greater part of the water which comes down the Mokelumne River is that which is allowed to run into it from the reservoirs of the Blue Lakes System.

The Amador Canal is forty-two miles in length, seventeen and one-half miles of which lies along the steep rocky slopes of the main canyon of the Mokelumne

Seventeen and one-half miles below the headgate the canal turns abruptly to the north, passing through a short tunnel, called the Madden Tunnel, and emerging upon the other side of a divide where it enters a country of a very different character. As the canal has a southerly exposure along the river side, such snow as falls melts quickly and the canal is never blocked with snow or ice. Eight miles below the headgates the canal passes around a bare granite cliff, known as Bald Rock, in a wooden flume one mile in length. From the head works to the foot of Bald Rock the general character of the country is granitic; between Bald

> Rock and the tunnel it passes through a formation of slate, while below the tunnel to the end of the canal the earth is of clay and gravel, forming an excellent ground for ditching purposes. Beyond the tunnel the canal winds around the slopes and head branches of the valley of Jackson Creek, at a height of 400 to 500 feet above the level of Jackson, until it reaches



The "Pacific Service" substation at Sutter Creek, whence power is distributed to the mining communities of the Mother Lode.

Summit Ridge, between Sutter and Jackson Creeks, along which it passes to Tanner Reservoir near the town of Sutter Creek.

From Tanner Reservoir are supplied the distribution ditches which deliver water to the mines and domestic communities in this region.

The foregoing list of lakes and reser-

these from the standpoint of economical development is the Deer Valley site, three miles below the dam of Lower Blue Lake. Concerning this reservoir site it is interesting to note that the waste waters from the two Blue Lakes and, also, the flow from Indian Creek and a number of small lakes in Indian Valley pass through the site of the Deer Valley reservoir. At the



A "Pacific Service" party at the summit of the Sierra Nevada, above Meyers'. Reading left to right: P. M. Downing, John A. Britton, Charles Rollo Peters (guest), W. E. Eskew, F. S. Myrtle, W. G. Vincent.

voirs includes those now improved and which form a part of the system of water supply of the former Blue Lakes Water Company, now owned and operated by "Pacific Service." In addition to these storage reservoirs, further reservoir sites have been located for future use when the demands of the company shall require additional storage facilities. The best of

southeasterly end of the valley granite bluffs approach to within a short distance from each other on either side of the stream and afford excellent abutments for a high masonry dam. With a dam 100 feet in height the proposed Deer Valley reservoir would impound nearly four thousand million gallons (500,000,000 cu. ft.).



"Over the Top" With Joe Schwartz

The boy whose narrative appears below has just passed through a peculiar and, in some respects, unenviable experience. He is a "Pacific Service" boy, having been employed in the meter repair department, San Francisco District, for upwards of seven years when his turn came to be drafted into the service of the United States. How he came to travel "over there," what he saw and what happened to him are all detailed in this narrative, which he gives in his own way, without suggestion other than that of the mental picture which he will carry always before him. Wherein his experience differs from most others is that he was reported to have been kitled in action July 31st, and it was not until much later that it was definitely known that he was alive, though severely wounded. From out the dark he has returned to San Francisco to the loving welcome of his family and friends. And so, his story.—Editor Pacific Service Magazine.

We left Camp Lewis November 10, 1917, for Camp Mills, Long Island, New York, to join the Forty-first Division. We arrived in New Jersey a week later at about 7 o'clock one morning and took a ferry to Long Island. When we reached Long Island we took a train to Camp Mills, and on arriving there we had to line up and let an officer pick us out just as if he were picking out a bunch of cattle. Then we were assigned to our companies, mine being the 162nd M. G. Company.

We stayed at Camp Mills three and a half weeks, and I can now say that it was worse than being in the trenches. We lived in tents and we had snow and rain every day; and we surely were a happy bunch when we left that place. The little drilling we did there we had to do with overcoats on, and when it came time to go to bed we would just remove our shoes and overcoats and jump into our cots. We had four and five blankets and still we were cold.

We left Camp Mills on the morning of December 4, about 4 o'clock, and I remember that the snow was falling pretty heavily. From there we went to Hoboken, N. J., where we were put on a transport.

We were eleven days on the water without a convoy of destroyers. twelfth day we picked up the convoy, but we had no trouble until the fourteenth, the last day of our journey. o'clock in the afternoon I happened to be in the messroom when I heard a report from a gun. We all jumped and ran up on deck to see what was doing, and all this time the firing was still going on. By the time we got up we could see one of the destroyers leaving, and it seemed like she was making about forty-five miles an Then she slowed down, turned around and came toward us again. About a minute after we could see a large splash in the water and the destroyer still coming toward us signaling. Then we got the report that the sub was a goner and there was a regular New Year's Eve celebration on board that ship the rest of the day.

We arrived in port about 6 o'clock that evening, and the little French kiddies that happened to be around were cheering and singing "It's a long way to Tipperary" to us. This was the city of Saint Nazaire, where we stayed for one week and then went to Bordeaux, where we did military police work for nearly three months. We left Bordeaux for a training camp where we did nine hours' training a day for three weeks, and it was sure all work. When we were through at night we were more than glad to get to bed. We had to hike fourteen kilometers with our overcoats on and a full pack on our backs. I'll tell you that seemed like some hike and was the first real hike I had, but I didn't know. I afterwards found out what a hike was; that one did not amount to anything after I once got to the front.

Well, when we left the training camp for the front they took us to the train in auto trucks. This was more like it. We boarded one of the celebrated French side-door Pullmans and rode all night. About 12 o'clock that night I was lying on the floor of the car and I awoke startled by the roaring of guns. I jumped up and looked out of the window to see what was going on, but could not see a thing. thought we had reached the front already, but could not understand how that train could get so close to the front. train started off again and the next morning we landed in the city of Creil. This city has a great many munition factories in it and is situated right near Paris. Here I found out what the excitement of the night before was about. The German airplanes were making a raid on Paris and the anti-aircraft guns were firing at They had plenty of anti-aircraft guns guarding Paris. The city of Creil was pretty well destroyed, but they never did seem to hit the factories. We stayed there all that day and that night we got out blankets and had to march to a cave to sleep in. This was the largest cave I had ever seen. I asked a French soldier some questions about it and he told me

that it was built in Napoleon's time and it held 45,-000 people. This was pretty hard to believe at first, but after getting into it it was much easier. All the people that were in the town would come to this cave to sleep. It was the only safe place in the city. They brought their bedding in push carts. mostly; people who had horses or mules would ride there in this fashion. We slept in this cave two nights, and both nights the city was bombed. Then we continued our journey until we arrived at our debarkation point, where we left in auto trucks for a small village in back of Cantigny, arriving

just one week before the battle took place. We were then segregated and put into three different companies. After all details were fixed up we received our service records and were sent to our respective companies to which we had been

assigned.

I was put into Company C, Second Machine Gun Battalion of the First Division. When we arrived we were told by the officer in charge that we would go into the trenches that night. So we lay around that day and towards evening we drew our emergency rations, consisting of two cans of corned beef and four packages of hardtack, which was not to be caten unless really necessary. We left for the front that night. It was a fourteen kilometer hike, but luckily none of the ten men that went with me was wounded. When we arrived we were put in our respective squads, which, in the trenches, consist of four men and a corporal. When firing it only takes two men to operate a machine gun, one to fire and the other to load. The other two stand by to step right in in case either of the men at the gun is killed or wounded. So, being a new man in the company, this was my position.

On the morning of the 29th of May, about 6 o'clock, we were told to go over the top and take the village of Cantigny. This was the first time any American troops had attempted to take a town without the aid of the French. About 5 o'clock in the morning our artillery threw over a barrage on the Germans who occupied that village, and after bombarding the town for an hour we started



Private Joe Schwartz

over the top. Before 7 o'clock that morning we were in Cantigny and holding it. It was one wonderful sight to see. As the infantry advanced, their fixed bayonets shone in the bright sunshine. We only took 150 prisoners in this small operation, but there were five times that many in dead and wounded. The French soldiers were looking on and took no part in this battle at all, but we could hear the Frenchmen say, "Bons soldats Americains," meaning "Good American soldiers." The Boches put over thirteen counter attacks in two days, and each time were driven back with

heavy losses. Our company lost three men and one gun in this battle. I guess that was a pretty good record for a

suicide outfit!

On the night of May 31st we were relieved from this sector, and on the night of June 1st we went into the Picardy sector on the Somme front to relieve the French. So that the Americans were now holding the two sectors of the Somme front, Cantigny and Picardy, and all with the First Division. We held this sector for over a month, and then one night in the early part of July, after the division had been assembled, we hiked all night to a small village where we stayed for six days. Then we got the order that we were going to move again and that our machine guns must go right with us; so the mules started away with empty carts and the machine guns went with us in auto trucks. We rode all that night and part of the next day, and then got off the trucks and put our guns in an empty hay barn. There we left three men guarding them, and had about a two-mile hike farther on to a small village just outside of Paris, in fact, just twenty-four kilometers from the city. When we got to the village we were brought into a loft of a large barn for our sleeping quarters. I'll tell you it did not take that bunch very long to get some straw and lay out beds for themselves. I did not even wake up for supper that night, and that's something I very seldom missed when I was out of the trenches.

We stayed in this place all the next day and left at night for the front. We rode from 6 o'clock that night until 12 o'clock

the next day in auto trucks and landed in one of the largest and thickest woods I have ever seen in France. This was the 17th of July. We had something to eat and then lay down for a sleep until about 6:30 that evening, when we awoke for mess and got orders we were to leave that night for the front. We left at 8 o'clock that night and hiked until 4 o'clock in the morning with about a half-hour's rest all night. It was broad daylight when we reached the front. We were unloading our guns and ammunition from the carts near a dense wood when our artillery opened up a barrage from this wood. Then we got the orders to go, and we sure did go. We forgot all about the hiking we had done and kept right on going. Down one side of a big hill and up the other, packing our machine guns and ammunition. We kept driving those Boches all that day, and about 6 o'clock that night we stopped to rest. We had our first meal since the night before, consisting of some monkey meat, hardtack and water, which tasted just as good to us as chicken would to you. We rested until 4 o'clock the next morning and then went over the top again. We had already captured their third line trenches and also plenty of their artillery and prisoners, and now we had them out in the open. We kept advancing that morning until about 8 o'clock, when we ran into their machine gun nests, and we were held in a big open field for about four hours before our tanks cleared out all their nests. Then we had some fine clear sailing.

We kept going on until 12 o'clock that night, when we were told to dig in. We only had one pick and a shovel for twenty men, so we had to use the tops of our mess kits to dig a small trench for ourselves. Here we slept for the rest of the night and did not leave until about 12 or 1 that day. Just before we got orders to move we had sent a couple of fellows back a ways for water, and in the meantime the Germans sent a barrage over on us, and while their artillery was popping away we got the orders to go forward. Off we were again through this barrage of the Germans, minus water. That water sure did worry me. I kept on looking back all the time to see if I could see the fellows coming, but there was no sign of them.

After I had walked about a half a mile ducking the German shells I felt something hit me and go through me. It felt like a 100-pound weight. My leg bent

up and it whirled me around a few times There were and I fell to the ground. three other men hit at the same time. The corps man came running back to give us first aid and he said to me, "I'll see who is hurt worse, you or the other fellow." I looked to see the other fellow and he was lying on the side of a bank. Then the corps man came back to give me first aid. I guess the other poor fellow was dead. After he had bandaged me up and stopped the bleeding he sent a fellow after a stretcher and four men carried me back to a first aid station. This was just a little hole in the ground, where they gave me a cup of beef tea and took my name and the company I belonged to. Then I was put into a Ford ambulance and taken to a field hospital. Here they laid us out in the open.

Pretty soon it started to rain and they threw rubber blankets over us until it Then the pain started. I lay stopped. there for a while suffering terrible agony in my foot. I called one of the hospital men and told him to either operate on me or give me something to make me sleep. In about ten minutes he and another fellow came and packed me into the operating room, which looked more like a butcher's shop to me than anything else, with about twelve operating tables and a man on each one. They laid me on a table, cut my trousers from me and then sent me into dreamland. When I awoke the next morning the first thing I asked for was water. The corps man sitting alongside of me got up and gave me some. It made me sick, but still I wanted more, and he gave it to me three times before the nurse caught him. He got a call down from that nurse for giving me that water. Then they put me into an ambulance and took me to what is called an evacuation hospital, where wounded men stay until their transportation is arranged to a base hospital. I was there eight days and I received the best of care and treatment; very good "eats." The Red Cross sent us chocolate and eigarettes every day. rode for twenty-five hours in a box car to the city of Vichy, where some five of the largest hotels in the city had been taken over by our Government and turned into hospitals. There I also received the best of care. I was in bed for two months and then was sent to a debarkation hospital, where I staved for fifteen days before I left for the good old U.S.A.

Friends, just keep in mind that when you give to the Red Cross you are giving to an organization that does the work.

"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF DECEMBER 14th, 1918 Total Number

GENERAL OFFICES-SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Baugh, Sergt. Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Sergt. Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
Growley. Albert J. Gass, Chester H.
Growley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
†Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Foraland, Raymond A.
Fronmuller, Theo. Carlton
Gray. E. L. Gray, E. L.

Hammond, Everett E. Hansen, Ernest Axel Hauck, Lieut. Fred B. Hill, Sergt. Crawford C. Hornberger, Cecil Louis Jones, Leon B. Keesling, Lieut. Hector Kiene, Joseph Kiene, Joseph Koester, Lieut. Frederick A. Lewis, Fred Charles Lindblad, Wm. Nathone Lindstrom, W. J. McDermott, Louis Wm. McDonald, Hayward C. Mel, Lieut. Washington B. Mensing, M. B. Monroe, Capt. Robert A. Murgatroyd, Robert Murphy, Licut. Elmo Neil Nordling, Wm. Osborn, Lieut, Norris W.
Parker Charles G.
Regan, Arthur
Rossiter, Sidney Benjamin
Rubenstein, Frank Sam
Schuster, Lieut. John C.
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard H.
Sultan. Lieut. Walter D.
Terhell, Sergt. Jacques
Thomas, Lieut. G: M.
Trowbridge, Capt. Alfred L.
Trudrung, Harry
Watson, John
Wilkins, R.
Wilhelm, Clarence
Williams. Lieut. Leroy C.
Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn., Octoher 14th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Corpl. Harold M. Barr, John Milton Anderson, Corpl. Harold M Barr, John Milton Barrett. George Batea, Byron M. Belford, William Bennetts, Herman V. Bertolacci, Ensign R. R. Braemer, Lee Bruno, Joseph Call, Bert Chandler, Sergt. Arthur E. Glarkson, Fuller Clayton, Oscar Fitzgerald Gooper, Walter Haines Cormack, Douglas Leslie Cowell, Charles Merritt Currier, J. Deuschle, Fred W Duceo, Daniel Dupuoy, Max Erickson, William Fairchilds, F. C. Ferguson, Allen E. Forbes, Robert E. Forbes, Robert E. Forbes, Robert E. Frederickson, Stewart Gay, Earl D. Gay, Earl D.

LAMEDA COUNTY DISTRICHANSEN, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hughes, William C.
Hunt, Lieut. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones. Sergt. Ivor
Keesling, Lieut. Homer Grant
Kendrick, Eldon W.
Klinefelter, Sam
Knopla, Charlea
Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt George L.
Maslin, Capt. Francis I.
Massoni, Dante
McKenzie, Malcolm M.
Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, George A.
Nelson, Norcal Hansen, Sergt. Hans J.

Oswald, James Parsons, James Perkins, Erwin S. Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn. Wilfred M.
Sandoval, Ensign Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Frederick J.
Sprott, Bryan Southerland, Frederick J. Sprott, Bryan Stephens, Alden Raymond Thompson, Clark C. Veirs, Harry D., Jr. Wagner, Ralph Otto Waltham, Ralph Oweo Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

Curtis Ray E.

CHICO DISTRICT

Truitt, James O.

Andrews, Crist C. Broyles, George B

*Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Raymond Carrol Dusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E. Beaumont, Floyd Burton Boyd, William Thomas Compton, John A.

COLGATE DISTRICT

Hunt, Edward C. Johnson, Oliver Ray Meagher, Francis Joseph Bandall, Earl Roscoe *Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

Kelly, A. T. Knight. Lieut. Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Mellerup, Fred H. Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A. Teachenor, J. L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W. Johnson, Samuel T.

Garlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James, Ed. Judd, R. H.

Alstrom, Frank A.
Brown, Ira A.
Burkleo, Dan
Butterworth, William Z.
Corlew, Harland Hall
Devlin, John A., Jr.
Bilden, Lohn Dickson, John Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

Gash, Lieut. Frank Taylor

Beloud, Leon C. Earl, George

Beveridge, James Kent, James Cody

Anderson, W. O.
Boulware, Wm. F.
Bryggman, Emil W.
Budalich, Oialy A.
Caussou, Jean
Casey, T.
Chase, Corpl. H. A.
Clausen, J. J.
Cullen, John P.

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Busses, George D.
Cameron, John

Beeler, Joseph J. Black, Marion Derr, Harvey Dyer, John B.

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt Harold S.
Francouer, Raymond J. Gewirtz, A.

DRUM DISTRICT

ELECTRA DISTRICT

Lohse, Lieut. Marcel P. Michael, John L.

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. G. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT Gomes, Carl Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold

MARIN DISTRICT Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

De Rosa, J. Esenman, Paul G. Gavin, Harold J. Hefner, Chester H. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E. Hubbard, Sergt. H. W.

NAPA DISTRICT Mayfield, James M.

Snell, Verne C.

Richards, James PETALUMA DISTRICT

Jones, Claude O. PLACER DISTRICT

Leary, Jerry REDWOOD DISTRICT

Deloy, H.
Fulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
Harcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.
Jennings, Edward J.
*Killed in action in France, Oct. 1st, 1918.

Johnson, Corpl. Hjalmar Kirkpatrick, G. B. Laughlin, Burton E. Likely, Lieut. R. D. Likely, H. E. Lundquist, Leonard L. Mengel, Henry Peers, G. A.

Coyle, William Doyle Crandall, Geo. H. Daigle, John M. Dick, Silas S. France, Fred Rhodes Hochderffer, W. E. Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan, Raymond M.

Logan, Raymond M.

TO DISTRICT

Mathews, Maurice L.

Melby, John

Miller, J. E.

Mullen, Ira J.

Newington. David

O'Connor, Edward T.

Olsen, Albert

Raymond, Harold A.

Richeson, Merle C.

Riggles, R. F.

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.) SACRAMENTO SUPPLY DISTRICT

SACRAMENTO DISTRICT

Jackson, Claude E. Jones, Verne H. Kinz, William J. SAN FRANCISCO DISTRICT

AUDITING AND ACCOUNTING DEPARTMENT Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter Haiden, Walter Inteman, R. Jacobsen, Earl D. Keating, Arthur Edward

Meservey, Charles A. Pease, Howard

McMilio, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton Patterson, Sergt. A. Earl Raterson, Sergt. A. Ear Ryan, R. Stearns, O. J. Stearns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

Myers, Earl Clifford

MARYSVILLE DISTRICT

Johnston, Corpl. Dwight D. Johnson, Frank Koenig, Sergt. George F. Lubmann, John Henry Madden, Thomas McCabe, Alexander

McKenzie, Grover Clarence

Pappa, Corpl. Julius Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William Young, Joseph P.

Osborne, Lieut, Butler J. Snow, Wilbur Roland

NEVADA DISTRICT

Taylor, Albert P. Taylor, Lieut. Cary P.

Fairchilds, John H.

Sutcliffe, Lieut. Harold T

Raynard, Duncan Sampson, L. E. Sehben, J. E. Smith, Corpl. R. F. Strofeld, George Thane, Alexander Uhlenberg, Louis H. Yost, Charles Z.

Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
*Suggett, Archie Dean

Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysiua M.

Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E. Wilson, Reginald St. Clair

SAN FRANCISCO DISTRICT-Concluded.

Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L. Allen, Fred H. Altland, Comer A. Anderson, Sergt. Lyle Z. Barker, Lieut. Guy A. Beatie, Gerald Biehl, Lieut. P. F. Biehl, Lieut, P. F.
Brady, George B.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F
Clark, Lyle G.
Cook, Frank L.
Cook, Joseph
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold Drew, Harold Durand, Milton J. Eichhaum, Sergt. C. W., Jr. Ellis, Clarence L.

COLLECTION DEPARTMENT

O'Connor, Charles A. Oliver, Adrian Pierce

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E. Shea, Cornelius Thomas Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

ELECTRICAL DEPARTMENT

ELECTRICAL

Estes, Sergt. Melville N.
Fogalsang, W. J.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerber, Harold
Gilbert, Paul H.
Glasson, Pearce
Griffin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughv. Corol. Edward Haughy, Corpl. Edward G. Henion, Floyd Hildebrand, Ernest Hildebrand, Ernest Honnef, Henry Hull, Sergt. Ray L. Hunnel, Bryan Jackson, George Jacobs, Samuel Leonard Kennedy. Donald S. Kobylinski, Walter Locks, Herman J., Jr.

Madden, Joseph J. Martin, William T. Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Ostrowski, Ray
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen. Nels Goldman
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F.
Shields, Garrison F.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Lieut. R. D.
Stohler, Adolph
Sundherg, Emil
Sweeney Michael
Szczepanski, Edgar M.
*Thompson, Capt. A.*R.
Thompson, W. H.
Thompson, U. H.
Thompson, W. H.
Thompson, U. H.
Thompson, W. B.
Thompso Thompson, Lieut. William Turner, John McBurney Upton, Albert M. Valach, J. P. Vargas, Virgil H. †Varney, Capt. K. Roberts Wagner, Hilmor A. Walker, R. J. Walsh, Thomas W. Waters, Wm. Winter, William J. Wolfe, Harold S. Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action in France on or about October 5th, 1918.

*Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

GAS DISTRIBUTION DEPARTMENT

Gowans, Robert B. Hansen, John T.
Johnson, Sergt. Alhert
Kemnitzer, Mellwood
Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918. GAS MANUFACTURING DEPARTMENT

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice

Hanley, Leo J.

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A. RECORDS DEPARTMENT Hughes, Percy Anthony

McDonald, Wm. John

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

SAN FRANCISCO SUPPLY DISTRICT

Abercrombe, Corpl. Donald Andresen, Corp. Carl. Blair, Walter B. Clark, Richard Clark, William

Faight. Corpl. Forrest W. Flint, Lieut. Arthur P.

Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Burns, Raymond J. Caldwell, Lieut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix, Francis L.

Bischoff, O. E. Boots, Benjamin Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John Lang, R. T. McCarthy, John McNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J.

SAN JOAQUIN DISTRICT Hunt, Lieut. Herbert Tevis McIsaac, Dan Martin, Lieut. David G. Olsen, Melvin L.

SAN JOSE DISTRICT

Candello, Lorenzo
Carroll, Louis
Chaboya, Wilbur Clarence
Charles, Lieut. Eugene H.
Coyle, Dan K.
Erbentraut, Edwin Otis
Faulkner, Chas. C.
Fiman, Edward F.
Frederickson, J. C.
Frier, George S. Frier, George S.

Hale, Lieut. C. St. John Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Johnson, Capt. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Bobert J. Menzel, Sergt. Robert J. Riley, Norman Sidney Young, C. Cuyler

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L.

Riesen, Alvin Rowe, Sergt. Ernest W. Roy, Harvey Leon Singleton, Paul Sprung, Lieut. Stanley W. Stojanovich, Tony Suess, Walter R. Tarp, James P. Weight Lieut Thomas A. Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Ross, Mervyn F. SOLANO DISTRICT

Moore, George R.

VALLEJO DISTRICT Argabrite, Lieut. Walter M.

YOLO DISTRICT Grandquist, K.

Howard, Everett J.

Morgan, Mervin E.

Short, Ralph C.

AUXILIARY ROLL OF HONOR

RED CROSS Curtis, Miss Letitia A. (Head Office) Y. M. C. A. Traxler, Jesse E. (Alameda Co. District)

The Financial Side of "Pacific Service"

By A. F. HOCKENBEAMER

Pending the customary year-end adjustments, it has been decided not to publish the preliminary monthly earnings statements for November and December but to present the complete figures for the year as soon as possible after the books have been closed and the regular audit by our certified public accountants has been completed.

The chief difficulty at this time in arriving at reasonably accurate conclusions with respect to the Company's net income is the unfinished condition of Federal Tax legislation now pending in Congress. In the preliminary monthly income account statements so far presented, we have endeavored to make adequate reservation for the increased taxes that will have to be paid to the Federal Government on the income of the year 1918, but these figures may, nevertheless, have to be change to some extent when the terms of the law are finally known.

NEW BUSINESS DEVELOPMENT

The following statement of consumers served by the Company on November 30th, 1918, and on the same date back to 1907 indicates the steady and consistent growth in all branches of the Company's business.

It will be noted that in the twelve months ended November 30th, 1918, 30,031 customers were added and the total number being served on the latter date was 475,458. Of the gain of 30,031, 16,800 were in the Electric Department, 12,744 in the Gas Department, and the remaining 487 in the Steam Sales and Water Departments.

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF NOVEMBER 30TH

November 30th	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	118,847	52,666	5,505		177,018
1908	129,044	60,164	5,744		194,952
1909	136,791	68,318	6,332		211,441
1910	149,440	81,050	6,673		237,163
1911	163,679	97,207	7,200	63	268,149
1912	193,295	113,571	7,895	197	314,958
1913	205,479	128,871	8,325	258	342,933
1914	217,880	145,278	9,041	314	372,513
1915	227,534	163,577	9,562	365	401,038
1916	230,616	176,131	9,910	395	417,052
1917	241,031	191,449	12,520	427	445,427
1918	253,775	208,249	12,977	457	475,458
n in 11 years	134.928	155,583	7,472	457	298,440



Meadow Lake and the Mokelumne River canyon, d

Great Storage Reservoirs Nestl Alpin

The panoramic views which are here presented take the readers of Pacific Service Magazine into a section of mountainous California that is but little known to the vacation tramp. There is a group of artificial lakes which lie buried in the mountain fastnesses of Alpine County, fed in part by streams and in part by the winter snows, which play an important role in the "Pacific Service" scheme of things, for they bear their wealth of

"white coal" through valley and canyon into the Mokelumne River, from which, in turn, they are taken by ditch and tunnel to provide power for the mining regions of the mother lode in Amador and Calaveras counties, and to supply water for domestic purposes to the various communities of that region, notably Jackson and Sutter Creek.

These lakes are by no means inaccessible, although they lie off the road of



Upper Blue Lake, taken from the upper end, two and



ich the waters pour on their errand of usefulness.

Among the Mountain Peaks of ounty

travel. They are no new discovery, for the Blue Lakes Water Company was organized before the great electric power plant at Electra was ever dreamed of. But they are coming into prominence just now by reason of the growing agitation for increased hydro-electric power developments throughout the State of California and elsewhere to take the place of oil fuel that is so badly needed for other purposes. Elsewhere in this issue of Pacific Service Magazine will be found

an article dealing with the Blue Lakes region. The panoramas here presented are of the chief features of interest. The highest altitude is that of Upper Blue Lake, which lies upwards of 8000 feet above sea level. Meadow Lake, which is some three miles away, is down in a hollow some 450 feet below the level of Blue Lakes. There is just one way to get from one lake to the other and that is by "hiking." Hence we recommend the locality to the seeker after healthful exercise.



niles from the "Pacific Service" camp at Lower Blue.

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEP FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER

Issued the middle of each month

> Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X DECE

DECEMBER, 1918

No. 7

EDITORIAL

CHRISTMAS a year ago and today! What a contrast!

Yes, and a contrast to thank Almighty God for!

Who of us, what optimist among the millions of mixed peoples upon this great, wide continent who, despite the foreboding, the anxiety, at least, that lay like a dull pain upon his heart, set out to celebrate last Yuletide in the good oldfashioned way, loosening his pursestrings and buying right and left with a grim determination that at least the young ones around his hearth should know no weight of care, should never for an instant be allowed to feel that good old Santa Claus bore upon his ruddy countenance smiles that came not from the heart, could, at the highest point of his assumed enthusiasm, have even dreamed that ere another twelvemonth had passed the black clouds that had hung upon the world so low as to threaten to cloak it with a pall that it should take ages to lift would have vanished from the sky as though by magic, and that from heart as well as from lip the peoples of nation after nation should send forth the gladsome message: "On earth peace, good will toward men"?

Yet, so it came to pass, and this Yuletide season in the year of our Lord one thousand nine hundred and eighteen will go down through the ages as the most memorable in the history of man. It is true we have scarcely had time to breathe, we have certainly not recovered from the shock of it all; it is also true, alas, that among us as well as among the peoples of other lands across the seas, there are desolate hearths to which even good old Santa Claus himself can bring no cheer; but it is also true that our great nation, like those others, is awake to the realization that a great, a lasting victory has been won and that out of chaos there shall come such order of both mind and estate as shall prove the havoc and misery of the past four years to have been well worth the while.

Humanity, as a rule, rises to great occasions, to sudden and trying emergencies, with infinitely more dignity and self-control than it handles the petty worries and cares of everyday life. The men and women of San Francisco who were there at the time of the great disaster in April, 1906, will remember with what fortitude the entire citizenship of the Western metropolis accepted what had been thrust, without an instant's warning, upon it. For days following memorable Wednesday morning young and old marched quietly ahead of the oncoming flames, calmly dragging after them such articles of personal apparel as they had been able to transport from their burning homes. The record those good citizens made for themselves on that occasion led a well-known writer, at a dinner held during the early days of the reconstruction period, to observe that for the first time in his life he looked with disfavor upon the famous works of art in which great painters had depicted, from the depths of their artistic imagination, scenes of burning Rome and other world catastrophes.

"Those painters were wrong," declaimed the speaker. "If the truth were known those good citizens of Rome acted in that dreadful time as did ours. If we were only given an opportunity to travel back those centuries and see for ourselves what actually did occur, we would find them calm and collected, walking in orderly procession a barely respectable distance from the onrushing conflagration, dragging their trunks or other receptacles of clothing along with them and giving way to no hysteria, uttering no cries of distress."

So it proved to be with the allied nations when massed to meet the oncoming Hun. With the same sense of order observed by the armed hosts trained to military discipline, our good people who were left behind set to work with a will to provide to the limit of their ability for their boys across the seas. And when to some anxious parent came the news of a young life given to the sacred cause there were hours, no doubt, of silent agony in the stricken home, but to the world was given the same unbroken front that the soldier boys gave to the enemy, while firm lips uttered proudly the sentiment of brave heart: "I am glad to have given my boy to the cause. I would give more if I had them."

So we have shown the sort of stuff we are made of and, thank God! we have had an opportunity to prove to our sister nations that we are worthy of a place in the front ranks among them. If all this is not cause for an unusual celebration of this glad season of the year, then let us forever and a day banish Christmas as an institution, lock up our long stockings in some forgotten drawer, close up our chimneys and relegate Santa Claus, with all that he represents, to the everlasting background of a silly creature of the imagination, as a figment of romanticism that has no place in so practical an age as this twentieth century of ours.

Readers of Pacific Service Magazine, we take this opportunity to wish you all the compliments of this glorious season. We feel in this Christmas the beginning of an era of advancement in all lines of activity. It won't take so long, after all, to restore conditions to the point of normality, and in the meantime we shall not be idle. If what those distinguished gentlemen who are about to sit at the council table in Versailles, or wherever else the great peace conference shall be held, are about to formulate—a world program, so to speak—means anything at all, it means that ere the first quarter of the present century closes there will be a league of nations in fact as well as in announcement whose interest shall be a common interest and whose motto shall be "Onward,"

We need not descant upon this at the present time. We need only say now that we look forward to this happy outcome of the world struggle. We of the West have plans for a great development in keeping with the new conditions. We have our place in the sun now and we mean to keep it. So, in the fullness of our hearts and with a joyousness that this time is very real, not assumed for the occasion, we wish you all, good people,

A MERRY CHRISTMAS! A HAPPY NEW YEAR! With much regret we have to announce that Mr. W. A. Widenmann, manager of our Stanislaus District, has left the service of the company.

Mr. Widenmann had the misfortune to lose his two brothers during the last two months, and now he feels it incumbent upon him to take up his residence in Vallejo, where his aged parents reside, and where the family property interests are located. For some years past he has been prominently identified in the social and business life of Newman, the headquarters of the Stanislaus District, and had made himself a popular figure in the The respect in which he community. was held is shown by the many tributes, both written and oral, which he received on his departure.

With Mr. Widenmann's departure the Stanislaus District will cease to be a separate entity as one of the "Pacific Service" districts. It will be incorporated with San Joaquin District, of which Mr. J. W. Hall is manager with headquarters at Stockton. The territory of the district consists mainly of the tract of farming territory on the west side of the San Joaquin Valley, in the center of which is the irrigation colony of Patterson.

"Pacific Service" also regrets to lose Mr. Charles J. Wilson, assistant engineer of Electrical Distribution, who leaves public service life to take up orange farming in Tulare County.

Mr. Wilson has the capacity for delving deeply into any subject in which he is interested. As our Chief Engineer, Mr. Downing, remarked the other day, "He may not be an accomplished farmer now, but it won't take him long to learn all about it and then some." So, we have little fear as to the outcome of the young man's business venture. He has purchased a tract of some twenty acres of orange farm in full bearing.

On Thanksgiving Eve his many friends in "Pacific Service" entertained him at a luncheon at a San Francisco hotel. There were thirty present and the fun was fast and furious. Everybody had something to say, and everybody tendered a little offering to make good his remarks.

The following contribution to the literature of the influenza epidemic is sent in from the office of Mr. W. G. Vincent, Valuation Engineer:

A malignant Spanish bacillus Came over the ocean to kill us, But it struck a real snag In masks made of rag, More effective than doctors who pill us!

TO SEA

Our"Pacific Service"Employees Association

<u> Такия концинатория пописывающий пописывающи</u>



The annual meeting of the Association was held at Elks' Hall, San Francisco, on the evening of Tuesday, December 10th; a month later than had been planned, but for this delay the epidemic of influenza must be held responsible.

The main business accomplished was the election of the new board of directors to serve for the ensuing twelvemonth. The following were elected upon the adoption of the report of the nominating committee: Chairman, F. R. George; vicechairman, R. E. Fisher; secretary, R. W. Robinson; treasurer, J. E. Murphy, and the following members of the executive committee to take the place of Messrs. R. E. Fisher, A. U. Brandt, E. A. Weymouth, and R. A. Gentis, whose terms expired: R. E. Crossman, H. G. Ridgway, W. M. Henderson and E. W. Florence. The nominating committee was headed by Mr. Leo H. Susman, of the Law Department, assisted by Messrs. C. E. Young, C. E. Murphy, A. P. Parratt, and J. P. Pape.

According to established custom, reports were received from the retiring presiding officer and the chairmen of the various standing committees. The leading feature, of course, was the report of Chairman Dazey, which was complete in detail and comprehended the salient points of the various committee reports.

Mr. Dazey started out by reciting the list of meetings held during the year 1918, and the prominent speakers who had headed the programs of entertainment and instruction, a list of widely known men whose engagement to address these gatherings had helped to maintain the high standard the Association had established since its organization. Concerning the policy of the administration in regard to these meetings the retiring chairman had the following to say:

"In the class of meetings conducted for the benefit of the members of the Association as well as for the other employees of the Company, we have endeavored to eliminate the educational features which have heretofore been given at our meetings, with the idea of making these educational features the subject of a special course of study. We have made an effort to present to the employees current topics, more particularly those bearing on the war situation, which has, of course, been uppermost in the minds of all true Americans. With this, and to offset to an extent the seriousness of the subjects of the speakers who have been good enough to address us, we have provided certain entertainment features, invariably ending each of our meetings with a This policy was adopted only dance. after a very careful canvass of the views of many of our employees, and while these views were widely divergent, the policy for the year 1918 has been based upon the expressed wishes of a great majority of the employees.

"In this respect, the attendance at our meetings, notwithstanding our depleted ranks, speaks for the correctness of the policy adopted, and while conditions have recently and very fortunately changed materially, I am quite sure it will be the idea of the incoming officers of the Association to continue in the policy of conducting meetings along the lines desired by the majority of our employees."

In epitomizing the reports of the various committees, the retiring chairman paid handsome compliment to each and every one for its earnest activity in the cause.

Membership—A retrogression in the number of members in good standing was reported. This, Mr. Dazey thought, was not surprising and should not be discouraging to the Association. The uncertain conditions regarding the period of employment, the interest taken by each one in the great struggle to the exclusion of every other consideration, and the fact that there have been demands made upon each and every one to the limit of his or her ability, all these factors would account for the falling off in membership and did not, the chairman thought, reflect in any way on the activities of the committee.

Athletics—The activities of this committee had also been hampered by war conditions, owing to the fact that so many of the enthusiastic supporters of athletics were in the army and to the fact that

those left had all been more or less actively engaged in war work. The only athletic activities conducted during the year 1918 were shooting and tennis, but a great deal of enjoyment was had in these sports by the members who had kept up their interest in them.

Relations with Employees in the Army and Navy-This committee had kept and was still keeping the Association and the Company in touch with the boys of "Pacific Service" who are in the service of our country, and the many hundreds of letters received from the boys which had been collected by the committee and passed on to their fellow-workers left behind through the medium of Pacific SERVICE MAGAZINE, had proven of great interest to all. A suggestion offered by Mr. C. R. Gill of the Placer District, one of the members of Mr. Brandt's committee, Mr. Dazev thought worthy of note. To quote: "Now that the war is practically over it will be well for us not to forget our co-workers in the service, especially those who are near the front. Time will probably hang a great deal more heavily on their hands now than when they were actively engaged, and I am sure that letters from home will be appreciated even more than formerly."

Inter - District Relations — Out-of-town meetings were held at San Jose and Stockton. Other meetings were planned but circumstances over which the committee had no control, notably the ban on public gatherings on account of the influenza epidemic, necessitated the abandonment of these plans. The committee strongly advocated the continuance of the policy of holding out-of-town meetings, a great deal of interest being displayed by the employees of the outside districts in these local gatherings.

Educational Committee — Lecture courses were planned and given to the employees of the Company during the year, the courses having been finished in September. These lectures covered the subjects of gas and electric engineering, and were given by Mr. E. C. Jones and Mr. W. M. Henderson, of the Gas Department, and Mr. J. P. Jollyman of the Electric Department, respectively, and were presented in an attractive and not too technical way so that employees of all departments were afforded an insight into the engineering side of the business to which they were devoting their time.

Attendance and Reception—Mr. Dazey thought that the spirit of good-fellow-

ship which was always apparent at the meetings of the Association was evidence of how well this committee had attended to its duties.

Entertainment Committee—Owing to many changes in the personnel of the Entertainment Committee, especially in the chairmanship, a full report of the activities of this committee could not be given by Mr. Jenny, who has been filling the position of chairman but a very short time. However, Mr. Jenny's many excellent recommendations were very valuable and were passed on to the incoming chairman of the Association.

Women's Affairs—Under the direction of Mr. R. W. Du Val a new impetus had been given to this phase of the Association and the concrete results spoke for themselves. A lunch room had been fitted up and was being conducted for the sole benefit of the women employees, and, recently, a rest room had been completed and was being used by the women employees. A lunch room was to be provided in Alameda County District also, estimates and plans for which were under way. The committee was also trying to come to some arrangements for a class membership for the women of "Pacific Service" in the Y. W. C. A.

Publicity Committee—Mr. F. S. Myrtle, as chairman of this committee, had assisted the Association by devoting the pages of Pacific Service Magazine to the activities of the Association, and by obtaining publicity upon all special events in the columns of the press throughout the "Pacific Service" territory.

Permanent Quarters Committee—At the beginning of the year it was thought that permanent quarters, or, at least, a club room for the members, would be established, but the uncertain conditions existing had necessitated the laying aside of this plan for the time being. In view of the excellent financial condition of the Association, however, this matter would probably be taken up at no distant date.

Library—The report of Mr. R. J. Cantrell, chairman of this committee, showed that quite considerable additions had been made to the library. Prominent among these was the donation made by Mr. A. L. Trowbridge, formerly of the Electric Department, now a captain in the Engineering Corps, who had turned his entire technical library over to Mr. Cantrell in trust. Should he return to civil life he retains the option of drawing these books,

or a portion of them, as desired for his own personal use; should he not return to the Company, the books are to become a part of the Company library.

In conclusion, the retiring chairman presented a statement of the financial conditions of the Employees Association at the close of his term. The following figures were given:

Receipts from all sources	\$9127.66
Disbursements	5695.03
Surplus carried forward	3432,63

As an interesting comparison, Mr. Dazey presented a statement of the budget appropriated at the beginning of the year for the various expenditures anticipated:

Estimated expenditures	\$8100.00
Expended (including \$2000 subscription	
to Liberty Bonds)	5695.03
Unexpended	2404.97

At the conclusion of the business sessions the members had the pleasure of hearing Private Joe Schwartz, lately returned wounded from the front, tell the story of his experiences in his own simple way. Joe's written account of his adventures will be found elsewhere in this issue.

No annual meeting of "Pacific Service" employees would be quite complete without an address from "the boss." Mr. Britton has always come to the front on these occasions, and this time his address bore an unusual significance, for while congratulating the boys of "Pacific Service," present and absent, upon the world's emergence from the dark shadow which had hung over it for four years, he sounded a note of warning for the future which, he said, all within reach of his voice would do well to heed.

Mr. Britton opened by laying certain important facts and figures before his audience. He told how in the great war just closed the number of armed men representing all the nations involved had reached the enormous figure of 58,514,-700. Of these the casualty lists contained the names of 24,536,000 and the total of dead 10,000,000. France, glorious France, had contributed 6,000,000 to the cause, and of these no fewer than 4,000,-000 had met with casualties, while the list of dead had reached 1,100,000. Britain had put seven and a half million men in the field, of whom 3,050,000 had suffered casualties and 658,665 had made the supreme sacrifice. The great continent of Russia had furnished 14,000,000 armed men, of which number 3,500,000

had been killed. The United States had contributed 3,764,700 men under arms, of whom 2,214,000 had been sent to France and 1,300,000 had served on the battle line. Of these the number of casualties had reached 236,117, while the total lost was 53.169.

Concerning the cost of the war. The United States had subscribed toward the war fund an average of \$148 per capita, no mean showing when it was reflected that our great country entered the war but nineteen months before its close. Great Britain had the credit of subscriptions to the extent of \$390 per capita. Other figures were given by Mr. Britton to give his audience some idea of the enormousness, from every point of view, of the great world struggle from which we have just emerged victorious. It was not possible, he thought, for any human being to realize such figures at a glance; but some small conception of what calculations in the millions involved could be gathered from the revelation that at ordinary marching pace, twenty abreast, between sunrise and sundown, it would take ten days for the British dead alone to pass a given point.

The warning which has been referred to was given by Mr. Britton upon the social conditions which have been spreading everywhere in the world for some years past and which since the conclusion of the war have grown apace. No need to explain to our readers what those social conditions are nor what they threaten to be. Mr. Britton expressed the sentiment of every good citizen of every civilized country on the globe when he said:

"To those who would raise the red flag of anarchy in our midst I say here that I am in favor of according them such treatment as those soldier and sailor boys did the other night in New York. I would go further; I would let the boys from 'over there' when they come home handle the situation as it develops. I venture to say there will be no machine guns turned on them.

"For you men and women of 'Pacific Service' it remains to act your part worthily. I feel confident that you will exercise your qualities of common sense when occasion demands. It will be your mistake, men and women, if you do not make this beautiful land of yours well worth the living in."

The proceedings terminated with the usual dance.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

The following interesting and graphic account of his experience in the battle of Argonne Forest, dated October 15th, was received by Assistant Manager Pape in Berkeley from Private H. H. Larson, Company A, 316th Engineers:

In the recent and successful drive of Argonne Forest our boys played a most important part. None of us had ever been "over the top" before and we were fighting on one of the most difficult battlefields

in Europe.

At a time set in the early morning of September 26th our artillery opened up and an avalanche of steel went forward. For several hours the deafening bombardment continued, until at 5:30 the barrage began to creep and "over the top" went the husky doughboys from the Golden State, across what had been "No Man's Land" for several years into the forest of Argonne. All that day they fought like wild men, killing and capturing many Germans, and when night slowly and carefully folded its blanket of darkness over them they had advanced seven kilometers.

Our task was to prepare the roads so the artillery could move forward, and we had orders to have them in passable condition by 1 o'clock that afternoon, a seemingly impossible task. Without wasting words, however, I will say the light and

heavies went over on sched-

uled time.

On afternoon, Sunday September 29th, at 4:30 our company went "over the top" with the doughboys, fighting until dark, and we killed and captured several hundred Germans and advanced over three kilometers.

During the night five of command, including our myself, became detached from our first line position, the entire line falling back to straighten out and make their line secure on both flanks. Finding ourselves alone we decided to stand fast until morning, and when dawn at last came and we were able to distinguish objects, we saw what we thought to be our line forming in front of us. Advancing toward them we discovered that they were the Germans' front line, so, needless to say, we very quickly backed up and barricaded ourselves in a shell-torn house on the edge of a small village.

By the time it was quite daylight my four companions and myself decided to make another stand. This we did and fought trying to hold the village against great odds. After a little while our supply of ammunition became exhausted, so there was but one thing left to do, try and reach our lines. So out of the old house and over the hill we started. Scarcely had we gone twenty feet when a machine gunner hit one of my pals and after knocking him down riddled his body with bullets. A second later another pal fell wounded in front of me, and a second later they got me through the left hand. Fortunately I fell near a shell hole and crawled into it, dressed my wound and lay out there until 7:30 that night before I was able to come out, for they had me spotted and kept directing their fire my way the entire day.

The shell hole I hit was an old one and half full of water, and one of the large shells, or H. E., exploded within ten feet of me, almost entirely covering me with

mud and water. Lying there on "No Man's Land" for twelve hours in a shell hole covered with mud and water and wounded is no pipe dream, I assure you, but when night finally came I crawled out and back to a first aid station, where they had a fire and gave me a cup of coffee, the first hot drink I had had for several days.

Working and fighting for five days and nights with two days' rations to start with, you can imagine how much that cup of coffee meant to me, and now I am back to a large beautiful hospital where real American girls serve the java and



Leslie Hall Smyth. (Formerly of De Sabla District.)

dress my wounded hand, and in about a month I will be out and able to rejoin my company and ready to go "over the top" to again give the Huns hell, for we do not intend to give them any rest until they lie down like the curs that they are and cry "Enough, we want peace!" and then only through victory, emphatically decisive.

Graphic and picturesque also are the following extracts taken from two letters written by Private Leon A. Mills, formerly of the Gas Distribution Department in Oakland, and now in a convalescent camp in France recovering from a serious wound. One letter is written before the signing of the armistice and the other

the armistice and the other on November 14th:

November 8th.—I would much rather be home when this peace is declared. There is much excitement here, but when a Frenchwoman is excited one doesn't know if she is talking about her fleas or trying to borrow some tobacco for her father. Oh, yes, the men talk, too, but why worry about trying to understand what a man is saying? We Yanks can't be bothered with a little thing like that.

Quite a pretty chick just went by. She was driving a big yoke of oxen, but in spite of their immense size and her petite being they were afraid of her, for when she dropped around the farther side of the team to be less conspicuous, and, incidentally, came into the position where those big goads could be punched into the rumps of the oxen, the team came into "double time." They fasten the yokes onto the horns, which seems a damnable way to hitch them, because at every jolt of the big two-wheeled carts the jerk comes directly onto their heads. Milch cows are used for teaming as well as The best combination is a big stallion (and I will say they have some big horses here, even if it is France) hitched in tandem with a burro. burro is about the size of a full-grown California jackrabbit and is usually protesting about its load. Now when one of these quadrupeds starts to sing, Caruso is a bum. The effect always produces homesickness. That is one of the most despicable diseases, and since I am hear-



Sergeant James Terhell, 193rd Aero Squadron, Taylor Field, Montgomery, Alabama. (Formerly of Electric Department, San Francisco District.)

ing them most all the time I am homesick most of the

There have been many AWOL'S lately. You will learn what that really means only when you become a soldier. It is one of the many little things whereby a soldier gets a kick out of life. He simply gets out of camp some way, either via a back fence or a friend who is on guard, and without a pass enjoys the comforts and pleasures of civil life. He may or may not be caught at it. If he gets away with it he is much better off than if he had been caught. If you figure out what I mean by that you will find that it were better to stake your-

self out near your bunk and stay staked, because if you are caught absent without leave it means demotion or guardhouse. And there are sure to be cooties in the guardhouse. And remember, my son, the awful disgrace of being in jail. Sorrow filleth my soul. I have been in jail. You see, the guard has to sleep there when off post.

November 14, 1918.

The celebration of peace in France was worth going through four years of awful war to see. It was worse than Market Street about 1 a. m. New Year's morning. They had confetti, but the one stall where it was sold had one salesman, and instead of having it packaged as at home he slowly filled a sack with his hands, each sale taking at least two minutes, and the crowd around yelling and gesticulating for more speed.

There was a lot of osculating during the two days and nights after the German peace was signed. Part of it we dodged and the rest we didn't. Those bewhiskered soldiers just from the front, who had that abominable way of kissing one on both cheeks, we tried to dodge. If we couldn't get away we either got sore or laughed with them, depending on our digestion and their cleanliness. But the ones we did not try to dodge? Well, I guess it was more the other way; they had to dodge us. For there were some chickens that would pass in the States for class, and it seemed open season for this sort of game. And the Yanks are good hunt-See how they hunted the Hun!

There were a lot of drunks, but the French never get they hard when booze. They are always happy and friendly. I didn't see a fight those two nights between drunks. There were several outbreaks, but I wouldn't call them fights. The French will hold one arm behind them and push each other, all the time keeping their mouths going more than their hands.

You would imagine a conversation limited to a vocabulary of twenty words, mixed-up English, French and the profane words being German, would be a little bit tedious. Well, it is if you had to talk. But when you stroll along with a little French creation on

your arm, watching what she calls "foolesh soldat" at their play, with little chance to talk on account of the bugles playing and the French singing, I have found that ten words were sufficient to

carry on the conversation.

Speaking of the French singing, the children get together in crowds of about ten or fifteen and sing their national airs and Madelon and Tipperary. They turn out fair music, too. This is without any prompting or persuasion. Then the older ones form arm in arm and come down the street with a song and some kind of a dance. They can't figure why a sober American doesn't want to sing at the top of his voice while walking along the street.

Francis L. Mix of Solano District wrote to Mr. Sedgwick under date of September 15th as follows:

I guess I am truly entitled to the title of "vet" now as I have been engaged in four different and more or less widely separated sectors, and in the last two took part in some of the hardest fighting of the war, at least in which American troops have been engaged. We did one thing which I understand was exceptional in itself, and that was to take part in two tough offensives in succession, and the French claim that there are very few troops whose morale is capable of standing such a test. Our division received a number of citations for its work and our regiment and even our own particular battery came in for special mention for



Dan K. Coyle, C Co., 322d Field Battalion, Signal Corps, 91st Division, A. E. F. (Formerly of San Jose District.)

rapid and efficient work. * * * The fighting in which we took part in the last two instances was of a very open character and were constantly advancing our position, consequently there was no opportunity to prepare shelter other than a small hole some two feet deep and just long enough to lie in, and with no cover except possibly a couple of boards if they happen to be handy or a canvas shelter half staked down over the top. Your home was usually just a plain ordinary mud hole when it rained, and you lay down to rest in wet clothes and a wet blanket. I say "lay down to rest" advisedly, because it was seldom that one really got two

or three hours at the most, for just about the time one would be drifting into sleep there would come a hurry-up call for a barrage or something of the sort. You can imagine that after two or three weeks of such life the gun crews were a rather haggard looking bunch, and that anything in the nature of a whole night's sleep was a sort of heaven on earth. Of course, a hole such as I described affords a certain amount of protection against shell splinters.

The worst experience of all is at night when a heavily loaded bombing plane comes circling around overhead, its engine droning with a slow hum-hum as though trying to advertise its nationality, and after dropping a bomb or two as a starter finally kicks out the tail gate and lets the whole load drop with a tremendous crash. There is an awful feeling of helplessness in a case of this kind, because usually there is no more protection than the blue sky. After seeing the holes one of those birds make a dugout does not amount to much. They are always so deliberate in getting rid of their load, too, and the suspense is the worst part, because all a fellow can do is to lie there and say, "Come on you Dutch drop it and do your damnedest."

Corporal Carl Andresen, 102 United States Infantry Band, wrote an interesting letter under date of October 15th from France. Andresen was recently transferred to the band and finds himself pretty busy practicing up on his clarinet after some four years' neglect of that useful instrument. He states:

"If Fritzie does not accept President Wilson's terms pretty soon we will put a number of their beautiful cities in ruins just like they have done to France. It will soon be town for town, then there will be a change in Fritzie's voice.

"In July a Hun machine gun sniper nearly got me twice in the left leg. was located in a tree and he got my legging in one and place about three inches above it scored a black mark on my leg. He kept eight of us in an old shell hole for nearly an hour. * * * Well, we will make them sleep in old

shell holes or three-foot ditches for a while and see how they like it."

"I'm on my way but the going's slow," writes George W. Jordan, now at Fort McDowell, Angel Island, formerly of the Alameda County District. "When you move you go fast. At 8:30 they post your orders, you are inspected and move at 10. This is a great place for examinations, and the officers are surely fine fellows. During inspections they go down the line and ask the fellows if everything is satisfactory and if they are getting enough to eat. One fellow said 'No.' You should have seen the shake-up, with improvements. They have big signs up in the mess halls: 'There is enough for every soldier to eat. We want no man to leave the table hungry. It is better to take a second helping than to overload your plate and throw it away.'

"They sure treated me fine in the hos-

pital when I was sick."

From Dwight D. Johnston, formerly of Marysville District, now with "A" Battery, 59th Artillery, C. A. C., A. E. F., to K. I. Dazev:

Have seen a lot of France by moonlight lately. Had two tours, one of two weeks and one of ten days with a Holt tractor engine for motive power. But we got to where we were supposed to be and did Have been in two different our bit. drives, and believe me, honey boy, when they come over with a whistle and then wham you, you sure have a creepy feel-



Sergeant Alex. Pringle, Sergeant Electrician, U. S. Signal Corps, 91st Division, A. E. F. (Formerly of Electric Department, San Francisco District.)

About seventy-five vards is as close as they have been so far, but that is close enough for me.

is the darndest This country to rain. Rain all the time, and when you are on the move and have to try and sleep in wet camp it is mighty uncomfortable. But that all goes with the soldiering game. On the two tours we had to make wet camp about two-thirds of the time. Thank the good Lord they issued us hip rubbers (boots) and slickers, and we managed to keep dry.

The spirit of the whole American force is fine; every one of the fellows can see only one ending, and, of course, we hope it

will be soon. The French seem to be the same way. All the French soldiers whom I have seen have a grin for us when we go by. Have seen a number of Hun prisoners and they all had a happy look over being captured.

The following letter, dated October 8th, was addressed to the Committee on Relations with our Employees in the Army and Navy by Private Howard Little, Company "B," 316th Field Signal Battalion, A. E. F.:

"This morning Lieutenant R. H. Stevenson handed me two copies of THE PACIFIC SERVICE MAGAZINE which he had just received. It was a great treat and brought memories of the days I worked my shift at South Tower.

"We thought it was tough back there on cold rainy nights when there was trouble on nearly every line, but that was all play compared to the experience of shooting trouble on the telephone lines just back of the front lines while the "75's" and "HE's" are whizzing by and the stench from a wrecked graveyard is strong enough to gas an army mule.

"We got through our first battle without a scratch and while we are resting up Lieutenant Stevenson insists that I write to you in order that you may know where I am and how I am making it."

Private George Barrett, formerly of Alameda County District and now of Battery "F," 12th Field Artillery, wrote under date of October 21st, sending a Merry Christmas and a Happy New Year wish

to his many friends:

"I have been fortunate in belonging to one of the best shock troop regiments that has left the States. They have taken part in all of the offensives that American troops have been in. I have been lucky enough to take part in two of these offensives and one of them will live long in the hearts of our regiment, the only one that has been entirely commanded by an American general. The second offensive has been a hard one that has met with stiff resistance, but we are still keeping Kaiser Bill retreating. In one position which we took while the Huns were on the run we came across a German war garden. We took away two carloads of as good cabbage, radishes and turnips as could be had in sunny California. celebrated the occasion that night by having some good old corned beef and cabbage for supper. After all, Sherman was not altogether right.

"The boys of our battery are going to celebrate the holiday by adopting four of the French war babies. We have taken a collection to furnish our orphans for one year with all the necessities that a baby should have. So you see where our

sympathies are."

A foreign postcard received under date of October 30th from Private J. Equi, formerly of the San Francisco Supply District, indicates that he is sick and in a hospital in France.

John M. Rowe, formerly at Station "C," Oakland, is now a regimental sergeant-major at Camp Lewis. This is the highest non-commissioned rank in the army. Johnnie wrote under date of November 6th and as he was at that time very anxious for his chance to go overseas he is now doubtless numbered among those thousands of disappointed men "who tried their darnedest but were out of luck."

J. T. Henderson, United States ship Schley, wrote a very long and interesting letter describing his experiences since leaving Mare Island. The ship was built at the Union Iron Works and the trip to Norfolk, Va., included a seven-day stop at San Pedro to repair sixteen bearings which were burned out by the stoppage of a lubricating oil pump. They stopped at a port in Mexico and again at Panama, where Henderson was fortunate to be off duty while passing through the canal. He

expected to leave soon for parts unknown and to be on active duty.

Lieutenant Fuller Clarkson, Aviation Corps, called in to see us while on furlough.

Extracts from letters from Sergeant E. G. Haughy, Battery "C," 17th Field Artillery:

October 15th.—Just a few lines to my dear ones to make my day complete in No Man's Land. Everything is going great and we are doing our duty with the same true American spirit that Fritz can't break, although he has tried his best. In the last crack we took at them they put up some fight, the worst we have been up against, but that doesn't make us lose heart; we have got his goat and know it. At the outcome of this mixup we stopped somewhere around thirty-five kilometers from where we started closer to German soil, and if the French could have broken their line as fast as we did the Lord only knows where we would have stopped.

October 16.-Well, here we are again, seventeen miles from where I was writing yesterday, in one of Fritz's homes with a swell stove in every room and a piano in one of the rooms. I guess this is sure some speed. I will tell you how it all There was a hill which it came about. was impossible to capture, so our worthy little doughboys set after it. The French had been at it for twelve days, but Fritz held on. Now the hill is named the "Sixteen Minute Hill." Our artillery got orders to clear it and the doughboys captured it in sixteen minutes, leaving the hill ours, also all guns and 743 prisoners whom we surrounded. I am now in the sector of the Huns' greatest retreat, attached to France's greatest division, so that is why you don't hear much of us, but France gives us the credit of saving Paris.

October 18.—We just got orders to move up, which means that Fritz has gone closer to home. When orders came in to move there were big smiles on everyone's face, as we thought we were going to be relieved and go to a rest camp, for we are the only ones of our outfit left. The rest were sent to a rest camp three or four days ago, but we had to send some more infantry over the top. This is the longest stretch that they have given us, as one week is usually the limit, but I guess they figure us out of mischief while in action, but at that they are not working us too But I tell you Fritz can run like hard.

the devil and has good wind, for on the front he ran back thirty kilometers but we kept right behind him.

From Stewart Forbes, formerly of Berkelev warehouse, now Q. M. France:

"There is hardly any need of telling you of the happenings over here, as the newspapers back home get the dope pretty well. Of course, there are a few incidents that happen around here that I can't write in this letter. Our old friend censor is always on the job. But at that, from the way the boys have been going lately, it won't be long before we are back home telling you folks all about it. promise you will get an ear full, too.

"I don't know whether you have heard about the furloughs in this country. Every one of the boys is entitled to one after four months' service over here. Our time was up the 28th of last month, and starting Monday three of the boys are leaving. Of course, I couldn't be one of the lucky "firsts," but it won't be long

before I'm on my way.

"The resort we go to is in the Alps Mountains, near the Swiss border. There a fellow receives all the comforts of home, including an 'honest-to-God' bed to sleep That's worth a vacation itself, although I got used to these hard board bunks and hay mattresses long ago.

"Being in the army and over here, I imagine you naturally think that all we see is soldiers. I certainly see plenty of them and, also, flocks of girls. We have about four hundred of them working in the camp sorting salvage, etc. They are a great outfit, and, like all the French, not the least bit bashful. They have as much fun with us as we do with them when they start teaching us this French 'lingo.' So far I'm a damn poor Frenchman, but I have hopes.

"I almost forgot to tell you about our 'friends,' the Germans. We had quite a camp for them here, but they left us vesterday and the old prison barracks look pretty well deserted tonight. They certainly seemed happy and contented here, and they sure had reason to be that way, for they were sure treated white. got just as much as we do to eat and that's saying a whole lot. Here's hoping our boys who are prisoners in Germany are

treated as well.

"I really can't think of anything more to write about, but before I close I want to thank you the best I can for the newspapers you are sending me. As you prob-

ably know, the 'hum' town papers look mighty fine to any one so far away. Just keep up the good work, and if you ever think about it shoot me a few of the P. G. & E. magazines.'

A letter from Captain A. M. Bohnert, formerly of the head office, contains the following interesting information:

"Just before I left (I have been away for a month with pneumonia) the British requested a company of electrical mechanical men. We were not sure whether they wanted linemen or station men, so I asked the Britisher 'what kind of men,' and he came back with 'Western or Pacific Coast men.' This merely verifies the fact that the western engineer is more adapted to the rough and ready army engineering than the others are."

A letter received from Captain R. A. Monroe, formerly of the Civil Engineering Department, gives some interesting news from the front. Captain Monroe's letter was written on November 2d, and in it he said they would be veterans in about a week, when they would put on the stripe denoting six months' service in France. Captain Monroe is in the Fourth Division, which is part of the army of occupation, so that his address may now be "Somewhere in Germany."

Word has been received of the death of Paul Gutierrez, who was employed in the Fresno District. He was reported missing on October 3d, and in a letter dated October 29th he told of having been gassed and wounded, but later recovered in a base hospital and rejoined his company. His death wound was evidently received in a later battle.

The following former employees of the Electric Distribution Department have been promoted from first lieutenants to captains: R. D. Spandau, G. A. Barker and G. H. Hagar. Some record!

"SOMEWHERE IN FRANCE"

The bright autumn sunshine, cold in the shade.
A quaint street in an old French town
Winding down a hill, losing itself in a sharp turn
at the bottom.
An old Frenchwoman cleaning a pair of wooden
shoes at an open window.
A detachment of American troops going back to

A detachment of American
the front;
Their feet iron-shod make the cobbles ring.
A cat on a red tile roof stirs sleepily.
The footsteps die away.
The old lady closes the wooden shutter.
The cat stretches itself into sleep again.
All is quiet except the quacking of the ever-present duck eating the swill out of the gutter.

—Lieutenant Emmet N. Britton.

Tidings From Territorial Districts

Alameda County District

A scarf bee and not a honey bee and they don't sting and anyhow Myra Cary and several girls and no men decided to have one and it was at Myra's and there was Grace and you know Edna and little Gertrude and she's Myra's sister and a nice girl and they started and a dinner waited and they took the wrong car and a transformer caught fire and the car stopped and the firemen came and Myra waited some more and Gertrude said let's eat and she's Myra's sister and you'd never know it. and she's a nice girl and the car started and some one said "46th St." and "You're on the wrong street" and "Where do we go?" and he said, "I'm a new man" and it was raining and they only had one umbrella and the lights were out and the water was wet and it was 7 blocks and they were lost and they arrived and were late and they ate and they talked and they sang and talked more and danced and did everything (but sewing) and the only thing like a bee was the buzzing.

At the time the influenza was at its height and men were dropping out sick, leaving forces shorthanded, the heads of departments were taxed to keep the work going. Station "C" was no exception.

Finally, the relief oiler got the "flu." In desperation a notice was posted as information and warning to the remaining oilers. It was brief and to the point: "There will be no relief until the oiler comes back." The oiler recovered but was drafted into the army, whereupon some one wrote on the bottom of the notice: "Oiler has gone to relieve Pershing."

Earl Frohman Fisher had a very close shave with the "flu." There was a period of several weeks before he rallied. His convalescence was made a society event. A. U. Brandt and Fred George called. They were very much abashed by his growth of beard and volunteered to shave him. Effort was made to get R. A. Gentis to come out to do some talking so as to entertain Earl and distract his attention while the process was in operation. R. A. did not show, so the operation was undertaken without the ether. escaped the "flu" by a close shave, so he trusted the next shave. Earl has a big heart and it shows his confidence in human beings. He is back again and his friends are congratulating him upon his twofold escape.

It is reported that Bill Shuhaw of San Leandro while shaving with a safety razor cut his tongue.

Lew Rector Galbraith presented R. J. Cantrell with a cigar as a wedding present. It was formally sent inclosed in a quality envelope, as R. J., being at the head of the stationery department, is keen on good paper, and first impressions count. Anyway, R. J. returned the cigar in the selfsame envelope; yes, actually returned a wedding present. Lew would not feel so bad if he could but smoke it himself; anyway he doubts if R. J. knows a good cigar. However, the cigar came back with this notation: "Please send to Oakland to be made up into a briquette. Can't use as is. R. J. C." Lew took it over to Oakland. The superintendent of the briquette plant became indignant. He considered the cigar an insult upon the briquette, both as to makeup and aroma.

Dear reader, do you know any one who would accept a cigar? We would suggest that Lew get his money back but he has lost the purchase tag, besides the goods have been out over four days.

Drum District

During August, Edward Martin, Sr., father of James Martin, manager Drum District, passed away after a long illness. Mr. Martin was well known and highly esteemed by fellow employees and friends throughout this district. He was born in Cornwall. England, but came to California with his family over thirty-five years ago, making his home for

many years at Nevada City, where he followed mining. Later he lived in Butte County, where he was also engaged in

mining.

For a number of years he was employed as superintendent for a large mining company in South Africa. Since 1911 he worked almost continuously for this company as a general foreman on construction work on the South Yuba System, usually in charge of tunnel work.

The funeral ceremony was held at Nevada City under the auspices of the Odd Fellows lodge of which he was a member. A large gathering of friends

were present.

Another member of "Pacific Service," Mr. George Dixon, well known throughout this vicinity, died of heart failure on the morning of August 14th. Mr. Dixon had been in the employ of the company for over sixteen years.

He first worked on the construction of the Alta Power House. Since that time he nad been in the company's employ almost continuously as construction foreman whenever there was construction work to be done, and doing other work when there was nothing in this line to be done. He always worked in the company's interest, and was particularly adapted to the handling of men. In Mr. Dixon we lost a good man.



Our Berkeley office force: Seated from left to right—The Misses Frances Lansing, Alice Wooley, Isabelle Murray, Gladys Wooley, Erma Culin, Bessie Rider. Standing in front row—Miss Viola Esmond, Miss Anne Parker, Mrs. Adams, Miss Lillian Ramsey, Miss Sadie Gawley.

The death of our old friend and fellow employee, Robert Edward Linder, due to an accident which occurred on Friday, November 15th, was indeed a severe shock to all who knew him, and it is with the deepest sorrow that we write these lines. "Bob" Linder was one of the company's oldest employees, having been in the South Yuba District since 1882.

His death was caused by the accidental explosion of a box of electric exploders which he was carrying. Just how it happened will always remain a mystery. The accident occurred near his home and the explosion was heard for miles around.

Robert Linder was 57 years of age. He was born in Ohio and came to California when a young man, and for a number of years was engaged in mining. He was in this vicinity when the hydraulic mining industry was at its height, and assisted in the building of many canals and ditches which were then used primarily for mining purposes.

Bob Linder was one of the best known men of this vicinity, his acquaintances extending over Placer, Nevada and adjoining counties. He was a member of Clay Lodge, F. & A. M., Dutch Flat; Royal Arch Chapter, Colfax, and Nevada Commandery No. 6, Knights Templar, Nevada City, and also the Nevada City Lodge of

Elks. For many years he resided at Alta, and had charge of the canals and ditches of this district. He was a bighearted, loyal and true man, and always had the best interests of the company at heart, and in his death "Pacific Service" has lost one of its trusted and valuable employees.

Stanislaus District

That Wm. A. Widenmann, district manager of the Pacific Gas and Electric Company, has resigned his position with the company and will leave this valley, will be learned with regret by the patrons and citizens generally of the West Side.

As is known by many here, Mr. Widenmann was called to the family home at Vallejo the fore part of October by the accidental death of his brother, Henry J. Widenmann. He had only just returned here from that sad mission when he was again summoned to Vallejo by the wholly unexpected death of his last surviving brother, Adolph F. As the surviving parents, Mr. and Mrs. Charles Widenmann, of Vallejo, are 80 and 75 years of age, respectively, the deaths deprived the Widenmann property interests of an active administrative head, and for this reason the surviving brother finds it is his duty to now reside at the parental home in Vallejo.

In this connection another interesting contingency has resulted. Henry J. Widenmann at the time of his death was a Solano County supervisor and also a State highway commissioner. After his death the brother Adolph was made an honorary tender of and had accepted the

offices. Again must a successor be named. And again would it be an honorary and just compliment to bestow the offices upon the same and most worthy family line. As to whether Mr. Widenmann would be in a position to accept these added State and county responsibilities especially in view of the attendant extremely sad circumstances — c o u l d not be learned owing to his absence from Newman.

As an active and pro-

gressive citizen and successful business man, Wm. A. Widenmann has been a prominent figure in Newman and popular with all classes. It will be difficult indeed to find one who can take his place in the town and community life, and it will be regretted by all who know him that he is to leave this district permanently. Mrs. Widenmann has been prominently identified with the social activities and organizations of Newman, and she will be sadly missed.

The good wishes of scores of true friends will go with Mr. and Mrs. Widenmann to their home in Vallejo.—Newman (Cal.) Index, November 16, 1918.

Electra District

Electra District mourns the passing of Mr. C. H. Warren, who died on November 19th last, after an illness of about two weeks with influenza. He was one of the old employees of the Company and was transferred from the San Francisco office in September, 1909, to assume the duties of foreman at Sutter Creek, in Electra District. He was a very popular man and his work was thoroughly dependable and of the highest grade. His absence is greatly regretted in the Electra District as, indeed, by all employees who knew him.

VERNON HANDLEY.

Fresno District

When the report reached Fresno that the armistice terms had been accepted by the Germans, the celebration started at one o'clock in the morning and lasted



A "Pacific Service" turnout in the victory parade at Fresno.

until midnight the next night. The largest parade that the county has ever known took place the morning of November 11th, winding up at the courthouse steps, where numerous speeches and many songs were in order.

One of the prominent features in the parade was the flag carried by the girls in our office here. They had a picture taken, which is presented herewith.

M. L. NEELY.

San Francisco District

Installations upon the Government reservations as a rule are slow, due more or less to the rules and regulations covering approvals of various Government officials as well as correspondence and its accompanying delay.

Occasionally you find, however, a man who does things. This man at Fort Mason is Colonel Pardee. Recently he wanted gas for hot water purposes for one hundred and thirty-two men. Some four hundred and seventy feet of main was necessary. He took up our suggestion that he furnish the labor to dig the trench and had it ready for the gas distribution department within one day from his first application.

Mr. Henderson responded in like order. Result—mains in and gas ready before heater people could complete their installation.

This extension showed a usage of 39,000 cubic feet the first month and should amount to an approximate revenue of \$400 per year.

To Colonel Pardee, Sergeants Farley and Hammond we owe thanks for cooperation and congratulations for their efficiency.

F. TALCOTT.

The Lehmann Printing Company has made an installation of 33½ horsepower, 234 volts direct current, at its new location, No. 181 Second Street.

The Moore Shipbuilding Company, No. 638 Second Street, has increased its load by 35 horsepower, 234 volts direct current. More shipbuilding business, huh?

The American Railway Express Company (new building occupied as a garage and stable) at No. 639-41 Folsom Street, has installed "Pacific Service," the load consisting of two 5-horsepower, one 7-horsepower and two 10-horsepower mo-

tors, and also 400 amperes direct current for charging. Ought to get your packages on time now.

The American Import & Export Company, No. 439 Clay Street (Japanese firm), has increased its installation for rice mill

by 25 horsepower, two phase.

The Pacific Coast Boiler Works has recently taken possession of its new building at No. 235-7 Main Street, and increased its installation by 25 horsepower, 234 volts, two phase.

John Cassaretto, east side of Third Street bridge, has returned home to "Pacific Service" after an absence of about two weeks on the Universal Electric & Gas Company's lines. Nothing like "Pacific Service" after all.

The Main Iron Works, which never seems to reach the end of its extensions, has again increased its capacity by 25 horsepower, 234 volts, two phase, at its new location, Third and Channel Streets. The canceling of war work does not seem to place any check on the necessity of increased power with this firm.

F. S. GRAY.

The latest type of Rector Heating system is being installed in the Electric Distribution office, 812 Howard Street, by the Gas Heating Department and same will be thoroughly appreciated when completed, as the mornings are somewhat chilly.

- J. H. Godbold, superintendent of the steam heating department, is nursing an attack of lumbago. We are glad to know he is improving, as his smiling face is missed from the office.
- C. A. Gaines, formerly of the electric department, is now engaged in the farming industry near Fresno, where he finds that his engineering ability is of great help.

Friends of Henry Van Erkelens will be glad to learn that he is again engaged in station construction in the "Pacific Service."

Grover C. Hart, formerly of the electric department, has received a first lieutenant's commission while in France and is now on his way to visit his parents in Ohio.

S. J. LISBERGER.

PACIFIC GAS AND ELECTRIC COMPANY

A CALIFORNIA CORPORATION

Managed by Californians

Operated by Californians

"PACIFIC SERVICE" REPRESENTS

4,738 employees in all departments.

\$134,000,000 capital invested in gas, electricity, railroads and water plants.

37,775 square miles of territory in which it operates.

8,100 stockholders.

32 counties of the State in which it transacts business.

450,657 consumers served with gas, electricity, water and steam as of Dec. 31st, 1917.

1,803,108 people served in 32 counties.

178 cities and towns in which it transacts business.

\$5,750,000 annual wages paid employees in 1917.

\$1,017,099 taxes paid to the State of California in 1917.

\$236,140 taxes paid to the Federal Government in 1917.

164,075 horsepower developed in 14 electric water-power plants.

106,568 horsepower developed in 3 electric steam plants.

270,643 total horsepower developed in 17 plants.

587,144,061 k. w. hrs. sold in 1917.

8,537,925,100 cubic feet of gas sold in 1917.

18 gas plants.

30,000 miles of wire used in distributing electricity.

2,878.6 miles of mains used in distributing gas.

835 miles of mains and ditches used in distributing water.

700 miles of track of street railways operated and supplied with power.

47,858,362,262 gallons of water stored in 70 lakes and reservoirs. This amount of water would supply the city of San Francisco for 950 days.

53,672 acres of land owned in California.

2,923,932 barrels of California oil used in 1917.

70,318 horsepower in agricultural motors depending on "Pacific Service."

294,299 horsepower in mining, electric railways, manufacturing and other motors depending on "Pacific Service."

59,216 street lamps, gas and electric, lighted by "Pacific Service"

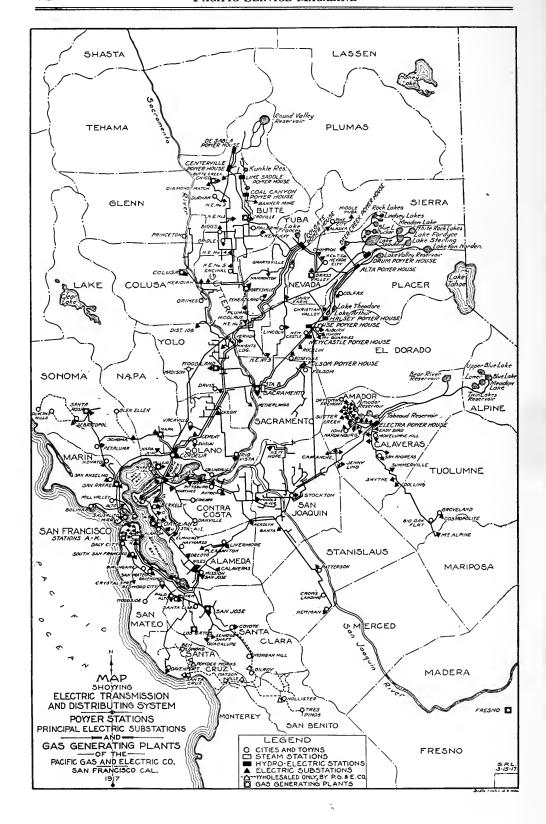
3,983,042 incandescent lamps nightly lighted.

636,855 horsepower connected to system. This represents the equivalent of 5.095,000 men.

PACIFIC GAS AND ELECTRIC COMPANY

Head Office: 445 Sutter Street SAN FRANCISCO

Branches in all principal cities and towns of thirty-two counties in North-Central California



Pacific Gas and Electric Company Furnishes

"PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	D1	RECTLY	INI	DIRECTLY	TOTAL		
	No.	Population	No.	POPULATION	No.	Population	
Electricity	128	1,210,830	48	132,825	176	1,343,655 1,228,292	
Gas	51	1,219,690 57,302	2	8,600	53	1,228,292	
Water (Domestic)	11	57,302	8	19,300	19	76,600	
Railway	1	76,000	1		1	76,000	

CITIES AND TOWNS SERVED BY COMPANY:

						n. n	
	ılation		ulation		pulation		oulation
¹Alameda	30,000	El Verano	400	MokelumneHill	300	San Quentin	2,500
Albany	2,300	² Emeryville	3,000	Morgan Hill	750	San Rafael	6,000
Alvarado	700	Esparto	250	Mountain View	2,500	Santa Clara	6,000
Alviso	550	*Fairfax	250	Mt. Eden	210	Santa Cruz,	13,600
6-8Amador City	1.100	Fairfield	1.000	² Napa	6,500	² Santa Rosa	11,000
Angel Island	280	Fair Oaks	300	*-*Nevada City	2,900	Saratoga	300
Antioch	2,000	Felton	300	Newark	505	Sausalito	3,000
Aptos	300	Folsom	2.000	Newcastle	950	*Sebastopol	1,950
Atherton	250	Forestville	225	Newman	1.200	Shellville	200
4-4Auburn	2,800	¹Fresno	48.867	Niles	1,000	Sheridan	250
Barber	500	Gilroy	2.900	Novato	400	Smartsville	300
Belmont	375	Glen Ellen	900	*Oakland	225,000	Soquel	400
Belvedere	550	-Grass Valley	5.200	Oakley	200	Sonoma	1.290
Benicia	2,400	Gridley	1,800	*Occidental	600	South Sau	
	800	Grimes	350	*Oroville	5,000	Francisco	3.750
Ben Lomond	65.000	Groveland	250	Pacheco	250	2-7Stanford Uni-	0,.00
	500	Guerneville	780	²-¹Palo Alto	6.000	versity	2.600
Biggs	200		500	Paradise	500	Stockton	42,000
Bolinas		Hammonton	4.000	Patterson	500	Suisun	800
Broderick	600	'Hayward	950	Penn Grove	300	Sunol	340
Burlingame	4,000	Hillsborough	2.500	Penryn	250	Sunnyvale	1.650
Campbell	700	⁶ Hollister	1.000	Perkins	250	Sutter City	250
Capitola	275	*- fone	800		7.500	8-8Sutter Creek	1.300
Cement	1,000	Irvington		Petaluma	3,500		350
Centerville	850	⁴-⁴Jackson	2,100	Piedmont	200	Tiburou Tres Pinos	300
	15,000	*Kentfield	500	Pike City			1,250
*Colfax	500	*Kenwood	200	Pinole	1,800	*Vacaville	
² Colma	1,800	Knights Land-	400	Pittsburg	6,000	²- Vallejo	15,500 200
Colusa	2,000	ing	400	Pleasanton	1,500	Vineburg	500
Concord	850	Larkspur	2,000	Port Costa	1,000	Walnut Creek .	
Cordelia	300	*- *Liucoln	1,500	Redwood City.	4,200	Warm Springs.	200
Corte Madera.	350	Live Oak	300	2-6Richmond	16,500	Watsonville	6,000
2-6Cotati	200	Livermore	2,500	Rio Vista	1,000	Wheatland	500
Coyote	200	² Lomita Park	450	*Rocklin	900	Winters	1,200
Crockett	3,000	Loomis	450	'Rodeo	300	² Woodland	5,000
Crow's Landing	300	Los Altos	500	6-4Roseville	4,200	Woodside	225
Daly City	5,500	Los Gatos	3,000	¹ Ross	900	Yolo	350
Danville	400	Madison	250	'Sacramento	76,000	¹Yuba City	1,750
Davenport	300	'Mare Island	500	San Andreas	750		
Davis	1,700	Martinez	3,500	² San Anselmo	3,000		
Decoto	300	² Marvsville	6,000	San Bruno	1,500	Total Cities	400 500
Dixon	1,200	Mayfield	1,100	San Francisco	580,000	and Townsl	,422,522
Drytown	225	² Menlo Park	1,100	² San Jose	45,000		
Duncan's Mills	200	Meridian	225	San Juan	550	Add Suburban	400 506
Durham	300	Millbrae	300	'San Leandro	5,000	Population	400,586
6-6Dutch Flat	750	Mills	350	2Sau Lorenzo	400	_	
Eldridge	500	Mill Valley	3,200	Sau Martiu	200		
*- El Cerrito	1.200	Milpitas	350	San Mateo	6,000	Total Popula-	
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,823,108
Emma	330	M Ission Saujose	200				

Unmarked—Electricity only, —Gas only, —Gas and Electricity. *—Gas, Electricity and Water. —Gas, Elect. and St. Railways. *—Electricity and Water. Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	208,249
Number of Gas Consumers	.253,775
Number of Water Consumers	. 12,977
Number of Steam Consumers	457
Total number of consumers	$\frac{1}{475,458}$

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

VERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y.
Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORE, MD
Munsey Building
BOSTON, MASS.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO LIL.

DAYTON, OHIO Mutual Home Bldg. Denver, Colo.
First National Bank Bldg.
New Orleans, La.
301 Baronne Street DETROIT, MICH.
147 Griswold St.
HARTFORD, CONN.
Conn. Mutual Bldg. 10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO, ILL.
137 So. La Salle Street
CINCINNATI, OBIO
FOURTH Natl. Bank Bldg.
CLEVELAND, OHIO
Guardian Building
CLOND. MINNEAPOLIS, MINN.
MCKnight Building
MINNEAPOLIS, MINN.
MCKnight Building
PITTBBURGH, PA
Farmers Bank
Fletcher Sav. & Trust Bdg.
FORTLAND, ME.
396 Congress:
PORTLAND, ORE
Railway Exch.
Industrial Tru

NEWARK, N. J. 790 Broad Street PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA. Farmers Bank Bldg. 396 Congress Street PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. San Francisco, Cal. 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass.
Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W WILKES-BARRE, PA. Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. Crocker
F. G. Drum

John S. Drum F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer JOHN D. MCKEE
JOHN A. McCANDLESS
C. O. G. MILLER
NION R. TUCKER
GEORGE K. WEEKS

OFFICERS

F G DRUM													President
JOHN A. BRITTON	•	•	•	•	•	•	•	•		•	Ť	•	Vice-President and General Manager
													Second Vice-President and Treasurer
													. Secretary and Assistant Treasurer
													Assistant Treasurer
CHAS. L. BARRETT .													Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM							Consulting Engineer
W. B. Bosley							Attorney
R. J. CANTRELL .							Property Agent
J. P. Coghlan							Manager Claims Department
C. P. CUTTEN							Attorney, Rate Department
P. M. Downing .						(Chief Engineer Electric Department
							Manager Land Department
JNO. H. HUNT							Purchasing Agent
J. P. Jollyman .							. Engineer Electrical Construction
							. Chief Engineer Gas Department
F. S. MYRTLE							Manager Publicity Department
L. H. Newbert .							Manager Commercial Department
GEO. H. RAND							Manager of Collections
R. R. Reidford .							General Auditor
Geo. C. Rовв							Superintendent of Supplies
W. G. VINCENT, JR.							Valuation Engineer

DISTRICT MANAGERS

DISTRICT	HEADQUARTERS	MANAGER
Alameda County	Oakland	 F. A. LEACH, JR.
Снісо	Chico	 H. B. HERYFORD
COLGATE	Colgate	 . MILES WERRY
Contra Costa		
DE SABLA		
Drum		
Electra		
Fresno		
Marin		
MARYSVILLE		
Napa		
Nevada		
Petaluma		
Placer	East Auburn .	 . H. M. COOPER
Redwood		
Sacramento		
San Francisco		
San Joaquin		
San Jose		
Santa Rosa		
Solano		
Vallejo		
Yolo		

Pacific Service Magazine

Volume X



Number 8

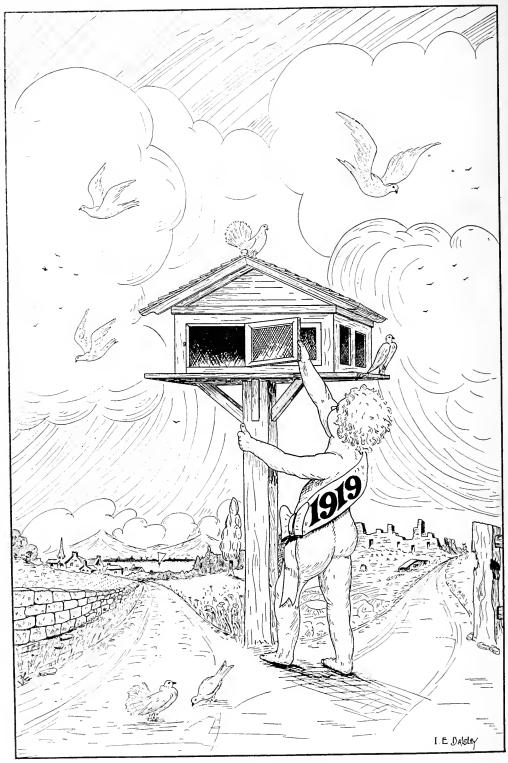
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for January, 1919

THE MESSAGE OF THE NEW YEAR	Frontispiece
FROM THE HEART OF OREGON TO THE BAY OF SAN FRANCISCO—By INTERCONNECTION OF THREE HIGH-TENSION TRANSMISSION	D G M
SYSTEMS	F. S. Myrtte 235
TIDINGS FROM TERRITORIAL DISTRICTS	248
PANORAMIC VIEW OF THE CALIFORNIA- OREGON POWER COMPANY'S PLANT AT COPCO ON THE KLAMATH RIVER	254-255
HER GIFT GAVE ONE POOR LAD COMFORT	256
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A.F.Hockenbeamer 257
EDITORIAL	258
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION	260
NEWS FROM OUR BOYS IN THE SERVICE .	262
THE "PACIFIC SERVICE" ROLL OF HONOR	266

Index to Advertisers

Sprague Meter Coiv
Standard Underground Cable Co
Steiger & Kerr Stove & Foundry Co i
Welshach Company ii
Western Pipe & Steel Co. of California iv
Westinghouse Electric & Mfg. Co v
Wood, R. D., & Co i



The message of the New Year.

Volume X

JANUARY, 1919

Number 8

From the Mountains of Oregon to the Bay of San Francisco

BY INTERCONNECTION OF THREE HIGH-TENSION TRANSMISSION SYSTEMS

By FREDERICK S. MYRTLE

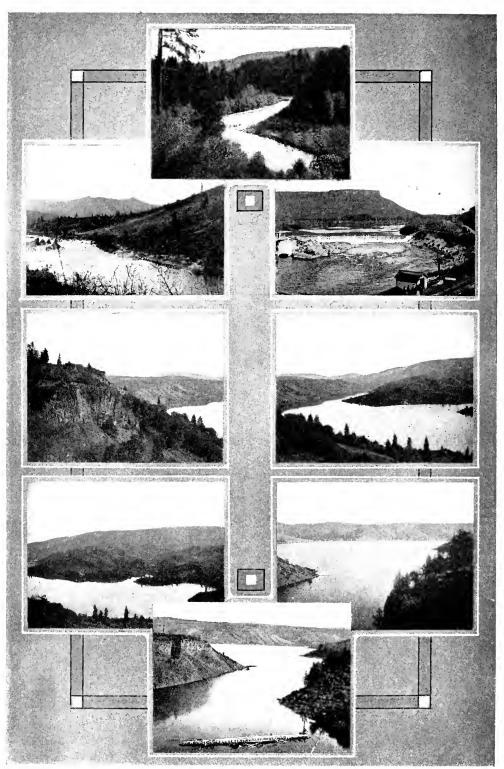
ROM the summit of the Cascade Mountains, in Southern Oregon, to the Bay of San Francisco, in Central California; from the fir-clad heights of a great territory where Nature supplies moisture with more than lavish generosity to the coast line of a section of country lower down where wet and dry seasons are as separate and distinct as the hemispheres: by river gorge and pine forest, over fertile valley, up hill and down dale, through an endless scenic wonderland, the mysterious energy that turns the wheels of industry and makes development of all kinds possible in the face of drawbacks of climate and conditions is carried today through an interconnection of hightension power lines of a capacity hitherto unknown in the annals of long-distance transmission to fulfill its errand of usefulness in the centers of population and prosperity that have grown up around the spot where the California pioneers landed in the days of '49.

It is a far cry from the heart of the Crater National Forest to the slopes of Mount Tamalpais; it measures as the crow flies upwards of 300 miles. Nevertheless, it is a fact today that electric power that takes its source from the two great rivers that have their beginnings in the rocky eminences of the Cascades can be shot into the great central distributing stations of San Francisco and Oakland.

The June, 1918, issue of Pacific Service Magazine contained two announcements of great interest to the electrical power industry of Northern California. One

was that the California State Railroad Commission had assumed control of the power situation by creating a power administration department, with Mr. H. G. Butler in charge; that the power administrator would have authority to increase or curtail output and distribution wherever and whenever he deemed it necessarv or advisable. In fact, his office would be in the nature of a clearing house for inter-company power service. The other announcement was that a contract had been completed between the Pacific Gas and Electric, Northern California and California-Oregon power companies whereby through interconnection of transmission systems "Pacific Service" would shortly have some sixty million kilowatt-hours a year to add to its electrical distributing system.

The particulars of this contract, in brief, were that power to the amount of some 8000 kilowatts would be taken from the California-Oregon Power Company's Copco plant in the mountains of Siskiyou County, near the Oregon line. time the California-Oregon's transmission lines reached as far as Castella on the south, but under this new agreement those lines were to be extended down to Kennett, in Shasta County, where they would join those of the Northern California Power Company at the latter's main distributing substation. The Northern already maintained a transmission line from Kennett to Colusa Corners in Colusa County, also one from its big hydroclectric plant at Coleman, on Battle Creek,



The California-Oregon Power Company controls exclusive rights upon two wonderful rivers, the Rogue and the Klamath, either of which maintains a ceaseless flow of "white coal" in such volume as to make storage reservoirs a superfluity. Reading from the top downward, left to right, the views in this group show: 1, The Rogue River above Medford; 2 and 3, the Rogue River at Gold Ray; 4, 5, 6, 7 and 8, Copeo Lake, into which the waters of the Klamath River pour, about ten miles below Klamath Hot Springs.



Castella-Kennett line connecting California - Oregon and Northern California power transmission systems.

on the slopes of Mt. Lassen, across to Hamilton City, which is about thirty miles from Colusa Corners. Under the agreement this latter line was to be reconstructed for the purpose of carrying additional power and then the chain would be completed by the

Pacific Gas and Electric Company building a line from Colusa Corners into Knights Landing, where it would join our company's great high-tension lines running from the Sierra summits to the Bay.

The contract, in fact, called for not so much a direct transmission of hydro-electric energy from the heart of Oregon to the Bay of San Francisco as a redistribution of hydro-electrically generated power through these interconnecting systems. In other words, by the new project the power from Copco would be delivered at Kennett and

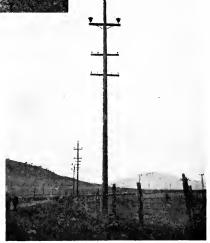
thereby relieve the Northern California Company's load at that center; enabling, in turn, the Northern to deliver its relieved load into the distributing system of "Pacific Service" through the new connection in the Sacramento Valley. All this, it was estimated, would add something like 49,000,000 kilowatt-hours a year to the amount which "Pacific Service" would be able to place at the disposal of its constantly clamoring consumers. Another item in the contract was an agreement by the Northern California to deliver, during the seven months' period from October to April in each year, 4000

kilowatts of its own power to our company, thus providing "Pacific Service" with an additional 11,000,000 kilowatt - hours a year. In the aggregate, then, the contract provided for an estimate of 60,000,000 kilowatthours a year.

It was a contract that purported to

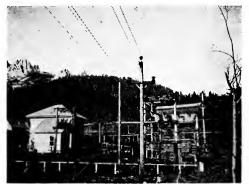


California - Oregon transmission line over the Siskiyou Mountains connecting Rogue River and Klamath River systems.



California-Oregon Company's main transmission line crossing the Shasta Valley.

benefit all concerned; for it provided the California-Oregon Company with a market for the output from its newly established Copco plant; it enabled the Northern to dispose of a large amount of available energy from its string of power plants in Shasta County; and it afforded



Substation at Castella, where new line starts.

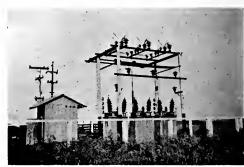
"Pacific Service" some additional electric power that, in view of its overcrowded market, was badly needed. The result of this contract and the construction work that ensued from its completion came to the public notice shortly after the birth of the present year when the newspapers of the north country announced the completion of the California-Oregon Power Company's new line from Castella to Kennett and the official tie-in with the lines of the Northern California Power Company at the latter place.

It was announced further that on Monday morning, January 6th, the Oregon Company began shooting 10,000 horsepower of electricity into the Northern's substation, so that with the recent completion of the "Pacific Service" end of the interconnection there now stretches one continuous chain of hydro-electric long distance transmission power lines reaching down the tremendous stretch of territory described, and making, in fact, the longest distance transmission system in the whole world. It would be possible, by clearing the lines, to actually receive power from the Oregon plant at the Bay of San Francisco, but, needless to say, the transmission

losses over so great a distance would make this a very costly proposition to rely upon. So, to quote the language of Major George F. Sever, of the War Industries Board, in telling the Electrical Development League at San Francisco about the new arrangement:

"Before the California-Oregon Company can place all of its wonderful potential hydro-electric development at the disposal of consumers in the great centers of trade so many miles south of its plants, it will have to get some genius like Mr. Frank Baum to effect the practical construction of a 300,000-volt line."

It was my great good fortune last fall to undertake a trip over the northern end of this combination in company with Major Sever, who from the day of his arrival upon this Pacific Coast to that of his departure for the Nation's capital made it his business to rely upon personal observation more than on records and statistics. We were the guests of the California-Oregon Power Company, and Mr. W. M. Shepard, the company's manager, was in charge of the expedition. It was a most delightful trip from beginning to end. We had glorious weather and we made the trip, stage by stage, by

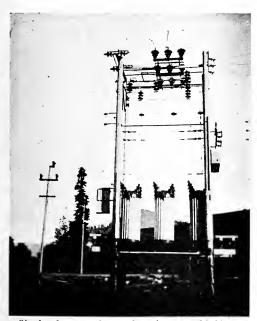


Outdoor substation at Grenada, in the Shasta Valley.

automobile. If that trip did one thing it served to impress the representative of the United States Government with the great power possibilites of that northern country where Nature supplies such copious moisture that great rivers cross from end to end carrying hundreds of thousands of potential horsepower in wet

and dry season alike, without need of storage.

We left San Francisco one evening by the Oregon Express and disembarked after breakfast next morning at Kennett. the southernmost point of the line that now connects the California-Oregon and Northern California Companies' systems. There we were joined by the Oregon Company's chief engineer, Mr. Perry O. Crawford, with a serviceable car warranted not to buck at the grades. Before starting on our journey we spent some time inspecting the Kennett substation, which is situated on a barren hillside within full sight and smell of the Mammoth Copper Company's smelter. It was difficult to realize that the prevalent epidemic of influenza could take hold of any community within reach of the sulphurous fumes that emanated from those gigantic works. Another instance of the mysterious nature of the malady we call "flu." The substation was equipped with a bank of three 750-kilowatt transformers for power distribution outside and one of three 1500-kilowatt transformers for the local load of the Mammoth Company. Two high-tension transmission lines came



Single-phase outdoor substation near Medford, Oregon.



Outdoor substation at Glendale, Oregon.

in there, one from Palo Cedro, a point on the Cow Creek system of the Northern California Power Company, and the other from Redding, each of 60,000 volts. Two outgoing lines, one 60,000 and the other 20,000 volts, connected with Keswick and Redding. We found preparations already in progress to receive the incoming lines of the California-Oregon Company upon the completion of the new power line from Castella, a distance across country of only thirty-four miles, but forty-nine miles by road following the tortuous course of the Sacramento River.

That trip from Kennett to Castella served to show our party the difficulties the company's engineers were experiencing in building their power lines. The route lay through some of the most picturesque country in the world, as every one knows, for we followed the twists of that plunging stream which has been made historical by railroad publicity agents and fishermen alike. We saw where the new line crossed the river every now and then by way of the many peninsulas that jut out from the main scenery. There were some big spans

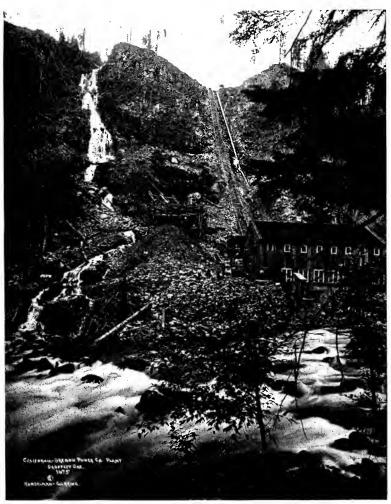
noticeable, one as long as 2000 feet. One sometimes wondered how the line construction men could get there to dig the foundations and to put the poles in the ground.

Arrived at Castella, we located the California-Oregon Company's substation at the then southernmost point of that company's electric distributing territory. Up in that part of the world construction is largely of a primitive order, so far as architecture is concerned, for many, if not most, of the substations are openair ones. However, this particular one is a substantial building and joins the old Jones lumber mill on the creek back of

Castella. It is equipped merely with a 225-kilowatt transformer for local lines. Three 60,000-volt lines connect here, one coming in from Dunsmuir while two go out, one to Kennett and another across country to Trinity Center in Trinity County, a distance of thirty-two miles, where the California-Oregon Company does business in helping out the gold-dredging industry. The latter takes a load of from 1500 to 2000 horsepower and the electric company has a 400-kilowatt power plant on Coffee Creek, which flows into Trinity Center.

Our next halt was at Dunsmuir, where the California-Oregon Company main-

tains a 600-kilowatt substation, and, likewise, one of its four principal district offices, the other three being located, respectively, at Yreka, Medford and Falls. Klamath We lunched at Dunsmuir and then went on our way over the Siskivous by way of Sisson, Weed, Yreka and Hornbrook. Yreka is known to fame as the city that lost the railroad. There was a jumble arrangeover ments, and so the Southern Pacific line lies through Montague and Yreka is off to one side. Nevertheless, it is a very pleasant looking and thriving little



The California-Oregon Power Company's power plant at Prospect, on the Rogue River, fifty miles above Medford, Oregon.

community and to all interested in power development it has a picturesque value for the reason that in the canyon above the town lies the old Shasta River power plant, pioneer of hydro-electric development in that section of the north country and the nucleus of what is now the California-Oregon Power Company, possessing exclusive water-power rights upon two of the greatest flowing rivers on the Pacific Coast, namely, the Rogue and the Klamath.

Mr. E. H. Steele, our line construction engineer in "Pacific Service," knows more than most people about the small beginnings of a now big concern, for he was at one time director and general manager of the old Siskiyou Power Company that operated the Fall Creek plant upon the stream of that name a short distance below the now big plant at Copco, and he remembers how the Yreka Light and Power Company sprang into existence in the late nineties, with a little steam station equipped with a second-hand Thomson-Houston machine purchased from our San Francisco company, and which later, through the enterprise of Mr. James Quinn, pioneer of that district, in 1901 blossomed out into the dignity of a hydroelectric corporation through the establishment of a little plant on the Shasta River above Yreka just referred to where the installation was, as it is now, one of about 400 horsepower.

Leaving Yreka, our way that afternoon lay through the heart of the Shasta Val-

ley and toward evening we began to climb until we passed over the Siskiyous and dropped down into Ashland and found ourselves well into Oregon. We made Medford that night, a distance of 110 miles from Dunsmuir, or 169 miles for the day's run. At Medford we found ourselves in the heart of the Rogue River

Valley, where development seems to be the watchword. In ten years Medford has moved from the fifteenth city in size in Oregon to the fifth place, while Jackson County, in which it is located, has moved from eleventh to fifth place. As regards general industry and expansion along general lines it ranks second in the State, being exceeded only by Portland. natural setting is picturesque to a degree. It is the center of a fertile plain entirely surrounded by mountains, with the crest of Mt. Pitt a majestic sentinel in the distance. We rested the night at Medford and the next morning made an early start for the mountains, proposing to follow the course of the Rogue River to its source at the summit of the divide and then crossing over to the other side find the Klamath and follow that downstream. We struck the Rogue River a few miles out from Medford to the westward and from that point we climbed slowly and steadily.

Fifty miles upstream from Medford we came to Prospect, where the California-Oregon Power Company maintains a substantial hydro-electric plant on the Rogue River. It is there that for the first time the engineer sees the great potential development in those mountain streams. Water for the power plant is taken from the river at a point two miles higher up and at the point of generation the supply is 150 second-feet with a 500-foot head. The descent to the power house is made by a tramway down a precipitous incline.



A striking observation point overhanging Crater Lake.



Where the waters are a deep, deep blue.

The plant's equipment consists of one G. E. generator of 4700 kilowatts, which is operated by an Allis-Chalmers turbine of 7000 horsepower. This plant is susceptible of increased development as conditions shall require, and there is another site marked out for a second power house farther down stream. It was here that Major Sever, who had been silently taking in the scenery on the way up, gave vent to a remark that was full of significance:

"Lashings of power, perfect lashings of power. What a pity there is not some big thriving city hard by to serve it to, and then we could see what limitless energy lies stored in this rushing water. I am a hydro-electric engineer, and I just hate to see this all going to waste. However, it will come into play one day."

We inspected the power house and then took lunch at the Prospect Hotel, run by one Jim Grieve, who has more than a local reputation. From Prospect to the summit of the Cascades is a distance of thirty miles. The way lies along the banks of the Rogue River gorge, and it is simply magnificent scenery. There are places where you leave the car and stand over the banks of that stream where the rocks above almost join, so that the waters seem to dash through a tunnel, as it were. Everywhere there is leaping and tumbling over rock and fallen tree, and there is material for the sketchbook at every turn. We found the source of the Rogue River on the west slope of the Cascade Divide near the summit, where the altitude was 6225 feet. The Government buildings are there and there are signs of good caretaking and system. It is only seven miles from there to Crater Lake, so we ran up and stood awhile on the edge of that great natural bowl of rock that is supposed to be the remains of some huge volcano whose top blew off and left an irregular saucer of several miles in diameter with precipitous sides overhanging the bluest water that the eye of man ever gazed upon.

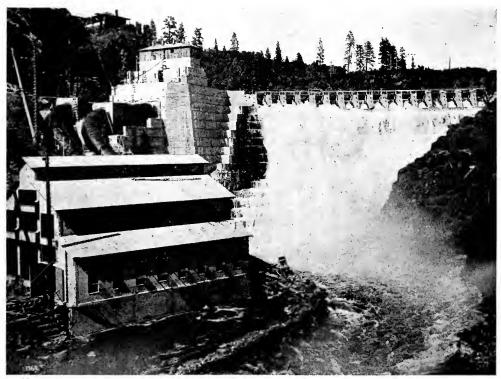
Leaving there, the road to Klamath



Major Sever at Crater Lake in charge of Messrs. W. M. Shepard (right) and Perry Crawford (left).

Falls lies down the east slope of the divide. It skirts Anna Creek gorge, of great height and similar in scenery to that of the Rogue River. An interesting feature of the trip is the passing through the Klamath Indian Reservation, where there are signs of active industry under Government supervision. Fort Klamath

the proposed site of a new dam which the company has in contemplation and which, it is estimated, will raise the surface of the water four feet. The Klamath Falls power plant is at the other end of the town, and is used to supply electric light for the community. The distance from Crater Lake to Klamath Falls is sixty-



Near view of the Copco power plant, showing power house, dam, gatehouse and, on the heights above, the company's guesthouse.

is at the lower end and then, a few miles farther down the road, the scenery opens and the broad expanse of Upper Klamath Lake is in view. This placid sheet of water is thirty miles in length, the only point in which it beats Lake Tahoe, and the road to Klamath Falls runs along the east shore. At the lower end rises the Link River, which flows through Klamath Falls and upon which the California-Oregon Company maintains a hydroelectric power plant of 600-kilowatt capacity. Water for this plant is diverted about a mile and a half above the town and just above the spot marked out for

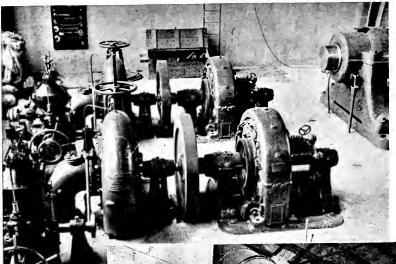
three miles by road, and a rough road at that.

Our party stayed over night at Klamath Falls and the next morning left for Copco, a distance of fifty miles. In most respects the trip resembled that of the previous day, the road now leading through pine forest, now swinging round corners overhanging a great gorge, this time of the Klamath River, which rises out of the lower end of Klamath Lake. An incident of this trip is the Topsy grade, which is very much appreciated by persons seeking after adventure.

Some ten miles above Copco we passed

through Klamath Hot Springs, dear to the heart of the fisherman the greater part of the year. Then about four miles lower down, we came upon Copco Lake, a sheet of water made by the dam at Copco which has had the effect of backmaintains its best and most up-to-date power plant. The dam at present is 112 feet in height above stream bed, though it is proposed to raise it fourteen feet more. It is a concrete reinforced arch dam and from this project two ten-

foot penstocks which carry the water down to the power house immediately below. The power house itself was designed by Mr. Perry Crawford and is up to date in every particular. Its main equipment consists of a



ing up the waters of the Klamath River for a distance of six miles. The company provides a launch for those who desire to take the trip down to Copco b y water. We took it and found it most en joyable. Rounding the

last bend in the lake we came in sight of the Copco dam, which somewhat resembles Spaulding. The settting is similar, in a narrow gorge with bluffs on either side. At this point the California-Oregon Company



Interior of Copeo power house. Upper view shows exciters, lower view generator and penstocks.

10,000-kilowatt G. E. generator which is connected with an Allis-Chalmers turbine of 18,600 horsepower. The plant was described at length in the last August number of the *Journal of Elec*-



Waters pouring over the spillway, Copco dam.

It is quite unique and some idea of the volume of water which pours continuously from the Klamath River may be gained from the knowledge that the plant is operated at a head of but 125 feet. Mr. John D. McKee, who joined our party at Copco, explained that the proposition to raise the Copco dam to a height of fourteen feet more was intended to give more storage in Copco Lake without drawing on Upper Klamath. That is not the only project the company is conteniplating. According as a market shall develop it is proposed to either double the capacity of Copco or build another power house at a site farther down the river of the same capacity; then, in the course of time, the capacity of both plants may be doubled. There is absolutely no limit so far as water is concerned. Storage reservoirs in that part of the country are almost a superfluity.

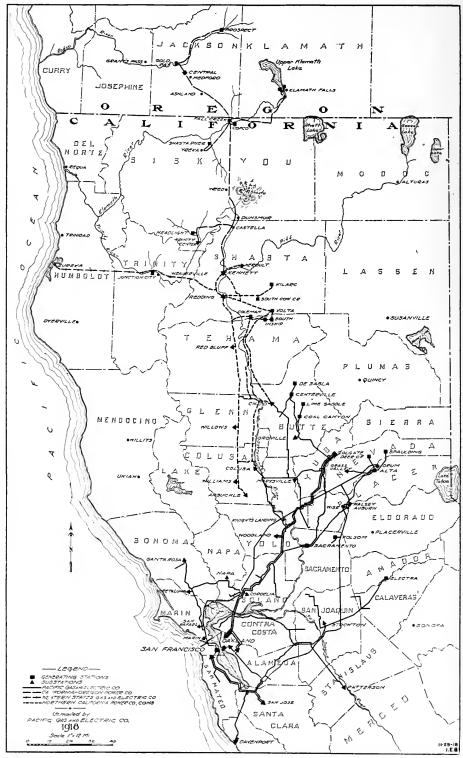
We were comfortably entertained at the guesthouse and then left for home by way of Hornbrook, about eighteen miles below Copco. Three miles down the road is located the Falls Creek power house referred to earlier in this narrative, which, as already described, derives its power from Fall Creek, a stream generated by springs from a high plateau four miles back and which empties into the Klamath River a mile below the power house. This is not, like Copco, a low-head proposition, for there are some 4000 feet of canal with 2800 feet of penstock, and the volume of water delivered is 54 second-feet at a 730-foot head. The plant itself, which is pastorally picturesque, is equipped with three units of the aggregate capacity of 2300 kilowatts.

Arriving at Hornbrook we took leave of the Klamath River, having described the circle round the company's hydro-electric properties. We had omitted to take in the Gold Ray plant, which lies on the line of the Southern Pacific Railroad to the east of Medford, but we had seen what was more important, namely, the great sources of power that are at the command of the California-Oregon Company and which, in the course of time, must yield their wealth of "white coal" for the general benefit of mankind.

It will be seen by adding up that at present the company maintains two



Suspension bridge over Klamath River at Copco, used during plant construction.



Map of the territory covered by the interconnected long-distance electric power transmission systems of the California-Oregon, Northern California and Pacific Gas and Electric Companies.

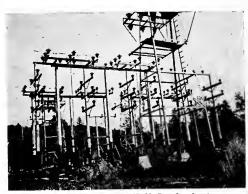
plants on the Rogue River, respectively, Prospect and Gold Ray, one of 4700 and the other of 1400 kilowatts capacity; three plants on the Klamath River, namely, Copco, 10,000 kilowatts; Falls Creek, 2300 kilowatts, and Klamath Falls, 600 kilowatts capacity. In addition there are the small plants on Shasta River and Coffee Creek already referred to. The company distributes the output from these plants in part in Oregon and in part in California. It is used for lighting and power in the towns, gold mining, dredging, saw mills and box factories and for irrigation.

The principal towns served are: In California: Dunsmuir, Weed, Yreka, Dorris, Fort Jones, Hornbrook, Sisson, Gazelle, Granada, Etna and Greenview; in Oregon: Klamath Falls, Medford, Ashland, Grant's Pass and Glendale, the last named being the northernmost point of the company's distributing system. The greater load, if anything, is carried in California, at least the power load is

bigger in that section, though the city load is bigger in Oregon.

To conclude this narrative of a most interesting trip I recall the parting words of Major Sever:

"Just one thing stands between this company and untold wealth, and that is



Switching station at Fall Creek plant.

a market for the power. Either a great big city must spring up within reach of its high-tension lines or we must solve the transmission problem."



Tidings From Territorial Districts

Drum District

XMAS AT DRUM POWER HOUSE

"Some time we had yesterday!" Such were the expressions heard the day after at Drum Power House. I think, though, the fun really began two days before, when we cut a tree, carried it home and set it up in the Drum K. V. A. Club room, it having been previously decided to have one large tree, and everyone to join in decorating it.

Then, there were busy evenings spent in making candy, cookies, etc., in which Mrs. Calder carried off highest honors. The club room was artistically decorated by Mr. Richardson. We have Mr. Hodges to thank for a large box of berries. Everyone furnished some decorations and as-

sisted in decorating the tree.

Christmas day passed quietly, everyone doing many things to Mr. Turkey and the trimmings. In the evening we all gathered at the club house and then things began to happen. Santa Claus, in the person of Mr. Charles Meservey, our soldier boy, distributed the presents. Leave it to Charley; no one was slighted. Music for the evening was furnished by the club orchestra, composed of four pieces: Richards, guitar; Meservey, mandolin; Reh, zither, and Murray, flute. Some music, sometimes you cry, sometimes you don't.

Special mention should be made of Mr. Murray's performance on the flute, also of our quartette, composed of Mrs. Richardson, Mrs. Moore, Mr. Calder and Mr. Moore, who received considerable applause for their Christmas carols. Then, when it comes to the Irish Washerwoman and the Buck and Wing, we all take our hats off to Pa Richardson. Joy held sway until a late hour.

NEW YEAR AT DRUM

The New Year was also fittingly celebrated at Drum, the festivities being held at the club house. The early part of the evening until nearly 12 o'clock was spent in playing cards, then we sat down to a supper, which all the chefs in camp assisted in preparing. As the New Year entered, the boys on shift at the power

house tipped us off with the whistle. Pandemonium broke loose. I don't know whether that is the way to express it or not, but something did break—no camouflaging, I assure you. I can't say how long the roar lasted, but it eventually subsided, and we cleared the room and until the wee hours enjoyed ourselves with a good old-fashioned dance.

May the New Year end as happily as it began, is the wish of all.

H. G. ROBERTS.

CHRISTMAS AT ALTA POWER HOUSE

Christmas at Alta dawned clear and cold. Although there was no snow on the rocky north side of the canyon, there was enough snow and ice on the south side, where the sun's rays do not strike at this



The Christmas Tree at Drum.

time of the year, to give the appearance of a real mountain Christmas.

In a cozy room of each cottage there was a pretty tree, and while Santa did not appear in person, as he had done on other Christmas Eves, Christmas morning found each tree beautifully decorated and well laden with the results of the many letters which he alone could read, and with the results of previous broad hints given by those who had grown beyond the "Letter to Santa" age.

In the homes at Alta, as in so many other homes, on this particular Christmas Day, there pervaded happiness and thankfulness such as no other Christmas has

brought.

A well prepared dinner was enjoyed in each home, the one in the Erskine home being shared by the Jeffersons from Drum Camp. Tom previously arranged the weather to permit his absence from his duties as ditch foreman for the day.

Thus was spent the Christmas of 1918

at Alta Power House.

E. T. ERSKINE.

De Sabla District

Christmas this year at De Sabla was different in many ways from others. There were two trees in camp, one for the foreman's children and one for the wee baby girl of one of the operators—her first tree—and it was "a thing of beauty and a joy forever" for her, with its load of pretty little gifts.

To start the day with, Santa had a very narrow escape from being caught by the small son of the foreman, who bounded out of bed at the first "jingle, jingle" of his bells! (I am told Santa nearly broke his neck, and lost his string of bells behind the flour-bin in his effort to get away

unseen!)

Shortly after breakfast the whole camp became strewn with toys—it was a busy day for the youngsters (and for the older folks, too, keeping out of the way!).

High Noon (Chinese time—about 3 P. M. American) found us all seated about the boarding house dinner table, where there was a profusion of decorations and good things to eat—even the wee baby girl sat up in a highchair and wrestled with a turkey "drum-bone," or investigated the mysteries of her mother's mince pie while mother wasn't looking!

I said "all," but we were a small gathering this year. Mr. and Mrs. Adams, always our guests at Christmas time, were

not able to join us because of sickness, and we sadly missed their cheerful presence. Three others of our crew were eating Christmas dinner with "home folks," and even the savory odors of shrimp salad, turkey and mince pie could not entice another of the "boys" to leave his room, where he had quarantined himself for the day because "it might be the 'flu'" (we are glad to say it wasn't, however).

After dinner there were the trees to be visited, toys, etc., exhibited, and cards of greeting to be read from members of our crew now in the service, or at other plants, and then it was dark enough to light up the candles, which was the closing event of the day.

New Year's Eve?

Bang! Bang!! BANG!! Zowie!

Was that the Power House blowing up? Oh, no! Only some of the boys, aided by recruits from Camp One, giving an illustration of Young America with his hands full of six-shooters and his pockets full of "catridges"—and his head full of the one big idea to make a NOISE terrible enough to frighten away old 1918!

L. M. E.

Electra District

CHRISTMAS AT ELECTRA

Cold, clear weather prevailed during the Yuletide season at Electra this year. Electra seldom looks for snow, but the heavy white frosts that covered earth and verdure put the real Christmas nip into

the atmosphere.

For some of us Christmas started on Christmas Eve, when the families attended a Christmas tree at the Handley cottage. While old Santa did not remain to appear in person at the reception, still he had proven himself exceedingly bountiful in his remembrance of the three little fellows of the plant—Byron and Warren Smith and Bruce Handley—as well as remembering the grown-ups. But, my! how those youngsters did enjoy that tree! And they were not alone in the enjoyment of the tops and automatic devices, etc., which were distributed to them. house for a time was a medley of whistles, horns, trains, balls, squeaking animals, etc. In time the mechanics in the assemblage concluded that they understood how the wheels went round and why the monkey climbed the string, and those things were left to the boys while

the older folks participated in games and

a good social time.

During the night Jack Frost redressed the buildings, hillsides and hollows in a new white coat, but a jolly, bright sun put him to rout from all but shaded places and we had another of our glorious days.

An invitation had been extended by Mr. Eskew to all "Pacific Service" employees and their visiting guests to partake of Christmas dinner at the boarding house with the compliments of "Pacific Service," and at an early hour the folks from the hill (where the red berries grow) joined us. A real "peace" banquet, including turkey and all the trimmings, was prepared and served by our willing and capable Henry Moon and his little bride, Mon. Thirty people partook of the feast and pronounced it unsurpassed and, thanks to "our boys," we did not have to turn Hoover's picture to the wall as we enjoyed it.

After dinner the tables were cleared away and music and dancing held sway. The convivial spirits of our genial host and hostess and the additional stimulus of several attractive visiting young ladies made the day one of jollity and fun that successfully banished any semblance of home-yearning. Exhibitions of the "Lame Duck" and "Pigeon Wing" provoked much hilarity and our host was by no means in the retired class at this play.

A light luncheon was served in the evening and nearly all remained and were joined by those who had been on shift during the day to enjoy dancing and cards until midnight, when we retired with three rousing cheers to our host and hostess and a unanimous expression of gratitude and appreciation for a delightful day.

P. C. H.

Alameda County District

You know Charlie Wilson. Well, Charlie retired from the O. & M. Electric Department and put his surplus energy and currency, which he had been storing up, into an orange farm down at Fresno, or near Fresno, or some place down that way. Charlie no more than got away when here comes a big consignment of oranges for us boys in Oakland. Attached was a big list of names which looked like our pay roll. There was one girl's name, and we don't blame him; she is a nice girl, and we all like her. He wasn't going to overlook anyone and on the end of

the list he put "et cetera"; no one was to be missed. You know he had a farewell party in San Francisco to which all his friends were invited. Charlie didn't do the inviting though, it was done for him. It was a surprise party and Charlie was surprised to count friends, some Oakland friends in particular, missing. So Charlie just gave his Oakland friends a surprise party by an orange feast. Both sides of the bay are now happy, if ever otherwise, and we all wish Charlie success and health in his new venture.

The Marchant Calculating Machine Company at Emeryville is planning a separate building for a cafeteria. The 300 employees will be served with hot lunch at cost price. Gas will be used.

Homer Keesling has returned to his former duties in the Electric Department after an absence of three months. He obtained the rank of 1st lieutenant 71st Engineers at Washington Barracks, D. C. He was training for searchlight duty along the Atlantic Coast.

Karl E. Klose has returned to the Collection Department after serving in the military police at San Diego. He was promoted, successively, to first-class private, corporal, and sergeant.

One night Charlie Jordan went out to San Leandro. On his return he ran for a car and in so doing was set upon by the village dogs. The noise aroused the town watchman, who came to the rescue of both. Charles rebuked the official for permitting such conditions and styled it a jay town, we believe, or some such shocking term. We also believe the town now has a custodian of canines. But, why was Charles out to San Le—an?

Finding a \$50 greenback was the experience of Lloyd Fibley, the elevator boy, while passing through a throng of bill payers in the main office. He says it is an exhilarating sensation. Dozens of people must have passed it by. It was three long days before the owner turned up, proved property and amply rewarded the lad.

Al Parratt says finding faults in ourselves is like hunting for a needle in a haystack, but in others they show up like electric poles.

LIZZIE FORD.

IN MEMORIAM

Alfred E. Jeffery of the Collection Department, Oakland, died January 4th of influenza after a brief illness. "Jeff," as he was fondly known by his co-workers, was kind, courteous and gentlemanly and was always considerate in dealing with the public. He entered "Pacific Service" August 29, 1911.

Bejamin S. McCoy of the office staff, Berkeley, died January 9th of influenza. Ben entered the service August 17, 1908, and by his genial ways made a host of friends among consumers as well as with his fellow workers.

R. H. Wells, gas maker at Gas Station "D," died on January 9th of influenza. He began service with the com-

any on April 12, 1905.

Z. B. Macauley, operator at the electric substation, died on January 11th following an attack of influenza. He entered the service of the company on August 29, 1904.

The untimely deaths of these four from our ranks means a severe loss to the many friends and associates and "Pacific Service." "Pacific Service" extends earnest sympathy to the families.

Yolo District

The Conaway Ranch is making arrangments to plant about five thousand acres to rice during the season of 1919. Water will be pumped from the Sacramento River into canals, and pumped out again at the point where it will be used. The land is a part of about twenty thousand acres of land that has been purchased by B. F. Conaway, an oil operator of Los Angeles. Considerable development work has been done to control the flood water from the Sacramento River and from the creeks that empty into Yolo Basin, where the land is situated.

The supervisors of Yolo County have instructed the District Attorney to proceed with the work of securing rights of way for the State Highway between Yolo and Dunnigan. It is understood that this link of the highway will be built at an early date. It will shorten the distance considerably between Woodland and points north.

The subjoined clipping from the Woodland Mail of January 5th outlines plans of the Sutter Basin Company for development of land in Reclamation District No. 1500, which is now being closed, shutting off the flood water from the Sacramento and Feather Rivers. The land is in the southern end of Sutter County, and comprises about sixty thousand acres of fertile soil:

ELECTRIC RAILROAD LINE INTO SUTTER BASIN

"G. F. Maddock, general manager of the Sutter Basin Company, has announced that a reconnaissance survey of the proposed electric railroad line into Sutter Basin, Sutter County, is being made by a party of engineers under the direction of the Sutter Basin Company.

"This line, as now projected, will connect with the Sacramento-Woodland branch of the Sacramento Northern Railway, about two miles and a half outside of Woodland. Thence it will be constructed northerly six miles, crossing the Sacramento River at a point five miles below Knights Landing. From there it goes up through the center of Reclamation District 1500.

"The Sutter Basin Company announces it proposes to construct the line in the near future as an aid to opening up and developing its vast amount of reclaimed land in Sacramento and Sutter Counties. It will enable the transportation of not less than 3000 carloads of produce annually to be taken from the lands of District 1500 alone.

"The branch railroad is the preliminary step, the company says, to the construction of food processing plants along the road. Plans include canneries, dehydrating plants, and other factories necessary to conserve food products.

"The railroad will ultimately extend northerly a distance of about ten miles, through an additional acreage of rich land, and connect with the Meridian branch of the Northern Electric. In so doing it will form a complete loop of Sacramento Northern lines from Sacramento to Woodland, to Meridian, thence back to Sacramento by way of Marysville.

"The plans for the branch line contemplated by the electric line company will be of great value to Woodland and the entire county of Yolo and will probably result in canneries and other food producing institutions being erected in this vicinity as well as affording much better means of transportation to districts in the

sections over which the line will operate."

J. W. Coons.

Solano District

The following communication from a consumer will be appreciated, we hope, by many who have signed up with "Pacific Service" in this district:

THE HOME INSURANCE COMPANY OF NEW YORK.

B. F. Newby, Agent.

Dixon, Cal., Dec. 9, 1918.

C. E. Sedgwick, District Manager, Pacific Gas & Electric Co., Solano District, Dixon, Cal.

Dear Sir:

Referring to your statement that you had heard from several sources that my wife was dissatisfied with the electric range that you installed for us several months ago (at my residence), and that my wife had said that she was sorry that we had bought one, we wish to deny that she ever made such statement; also the statement claimed to have been made by us that it was too expensive is untrue; on the contrary the cost of operation is very reasonable, much more so than we anticipated.

The range does all and more than you claimed for it, and gives entire satisfaction in every respect, and in cleanliness, convenience, and labor saving it can't be beat. If we could not replace this one, money couldn't buy it. That's what we think of our new electric range, and you can tell it to the "World" if you wish, or refer interested parties to my wife.

Yours very truly, (Sgd.) B. F. Newby. C. E. Sedgwick.

San Joaquin District

An old employee of the Stockton Water Company and a pioneer resident of this city passed into the beyond on January 7th, when Mr. Thomas S. Thresher succumbed to a hemorrhage of the brain.

No man in San Joaquin County was better known than this veteran, who had attained the age of 84 years. For nearly thirty years he was the principal collector for the water company. About three years ago he was retired on a pension and from that time enjoyed the only real rest he had known in his busy life.

Two years ago his health began to fail but up to a few days before his death he was able to be about and greet his friends. He was known and liked by young and old.

Mr. Thresher was a native of New York. He was a brother of the late Moses Thresher and came with him in early days to Stockton. He was grandfather of Mrs. Alice Wilson and an uncle of William H. Thresher of the Stockton Iron Works.

J. W. HALL.

Marin District

Herewith a copy of a letter received from a French orphan which this District has adopted.

Each employee drops his spare change in a can provided for that purpose and any deficit is made up in order to forward the amount necessary.

I thought possibly it would be interesting to the readers of the magazine.

The original letter was written in French and was translated by our Mr. Pierard:

Thursday, December 3, 1918.

Pacific Gas & Electric Co., San Rafael, California, United States of America.

My dear Benefactors:

I thank you for the interest extended to me in remembrance of my poor father, who died for France. I received the money order and I am deeply thankful to you. I am all alone with mama, and I am nearly nine years old, and rather large for my age. I am a brunette with dark eyes. Enough for physical description of myself. As to my disposition, I am fairly studious, although mama thinks I am a little lively. I like to play but work also.

I would be very happy if you would correspond with me, so in spite of the distance I could get better acquainted with the people who, for the love of France, desire to protect one of her orphans.

Mama joins me in presenting to you our most respectful and grateful thanks.

A little French girl who kisses you with all her heart.

SIMONE LULERT, Avenue de la Gare, Fleurance (Gers). H. G. RIDGWAY.

Nevada District

At a pretty home wedding at noon on Christmas Day at the home of her parents, Mr. and Mrs. Joseph Bartell, Miss Sadie Bartell became the bride of Milton J. Frey. The ceremony was conducted by Rev. U. E. Partridge of the Methodist Episcopal Church in the presence of the relatives and close friends of the young couple. The bride was attended by Mrs. W. E. Crase as matron of honor, and Mr. J. Frederick Hoskin of San Francisco was best man. Miss Olive Bartell, the bride's sister, was bridesmaid, and Master Elbert Tate held the post of ring bearer.

Up to the time of her marriage Mrs. Frey was employed as cashier in the local office of the company. Mr. Frey is also employed as electrician by the company and is well known and highly esteemed. The young couple will continue to make

their home in Nevada City.

L. H. HARTSOOK.

Redwood District

The following letter was received from A. N. Hayes, of Stanford University, in reference to the demonstration made by the Head Office during Peace Day:

"As a subscriber to your gas and electricity, may I express my appreciation of the testimonial to our Allies in which the Pacific Gas and Electric Company joined with others in making in the "Chronicle" soon after the signing of the armistice? It was an eloquent and beautiful tribute, and I felt proud of the spirit that prompted it, as well as of its expression."

E. W. FLORENCE.

San Francisco District

The beautiful Christmas Tree in San Francisco's Civic Center, which was a unique feature of the recent Yuletide celebration in the western metropolis, was lighted by "Pacific Service," and concerning this the San Francisco Examiner of December 29th had the following to say:

"Great credit is due the Pacific Gas and Electric Company for the wonderful cooperation and service rendered in making the illumination of the giant spectacle possible. Under the direction of John A. Britton, vice-president and general manager of this company, the whole resources of this organization were placed at the disposal of those who built and illuminated the wonderful tree. Neither time nor expense was spared by Britton in securing material or electric current so that San Franciscans could enjoy the greatest Christmas Eve fête ever staged in the history of the city.

"The task of illuminating the giant tree was one of the greatest presented within the city. Additional current to that which is usually used in the Civic Center district was necessary for the immense amount of electricity needed for the illumination of the tree, and extra feeds had to be built to the Civic Center for this

purpose.

"The scarcity of materials owing to the demands of war and the short space of time before Christmas Eve—the initial lighting of the tree—made the task very difficult. But Britton threw the whole resources of the Pacific Gas and Electric Company into the undertaking and succeeded in making the great Christmas Eve fète the tremendous success which it was."

Head Offices, San Francisco

IN MEMORIAM

Mr. Howard F. Cunningham, who was in charge of the mailing department, died at the St. Francis Hospital on the morning of December 24th. Mr. Cunningham had been employed by the company since January 3, 1913, prior to which time he was employed by the Pacific Telephone and Telegraph Company. He leaves one daughter, to whom his many friends extend their deepest sympathy.

Mr. Franz Louis Hoefer, employed as janitor, passed away on December 26th. Mr. Hoefer had been in the company's employ since September 3,

1918.





The California-Oregon Power Company's Great River, in Siskiyo

The Journal of Electricity in its issue of August 15, 1918, has the following to say concerning the Copco development:

"This striking new engineering feat in dam construction has recently been completed in northern California for the California-Oregon Power Company. The power from this source will be of constant supply throughout the year and the new interconnections now under way will soon make this timely energy in the far North available in the great industrial centers of the San Francisco Bay district. The breadth of interconnected network involved shatters all previous world records in the history of electrical engineering.

"This new unit of the California-Oregon Power Company, on the Klamath River in northern California, is ideally located with reference to the rest of the system. At the geographical center of the company's lines, with lines radiating to the Klamath, the Rogue River, and the Siskiyou Divisions, it relieves the deficiency of power to the south of the Sis-

kiyou Range. Up to this time the Siskiyou District had been dependent upon the transmission system over the divide from Medford for power during the peak load. The installation of the first turbine at Copco brings the generator capacity above the peak load demand, so that the transmission line over the range is now used for standby service. This network of lines is unique in that it is supplied entirely by hydro-electric installations, no steam plants being in any way connected with it. Each branch of the system has a small plant of its own near the center of distribution, which is augmented by power from the large central plants.

"Situated just two miles from the Fall Creek plant, built in 1903 and the first of the many now operating in parallel, Copco presents many contrasts with its predecessor, as shown by the following table:

Plant	Power Sou	rce				Ultimate Head in Ft.
Copco,	Allis-Chaln	iers Tu	ırbine	218,6	00	125
Fall Cr	eek, Pelton	Water	Whee	el. 1,0	00	730
	"	66	66	. 5	00	730
	"	66	**	. 1,2	50	730



ydro-Electric Power Plant at Copco, on Klamath County, California

"The turbine is of the low head type, rated at 18,600 h.p. The double wheel is supplied by two 10-foot penstocks, and discharges through a center outlet between the wheels. The comparatively slow speed of 200 r.p.m. necessitated an immense machine for the 12,000-kva. generator, the rotor alone weighing 85,000 pounds. A fair idea of the size of this apparatus can be obtained when it is known that to transport these heavy pieces down the nearly perpendicular walls of the canyon necessitated the building of a zigzag railroad with a maximum grade of ten per cent. Two 200k. w. exciters are operated by small individual turbines. Generation of power is at 2300 volts, two banks of transformers stepping up to 34,000 Delta and 60,000 Y for transmission. Eventually it is planned to make all the lines 60 kv.

"The power house is located at the foot of the dam, the penstocks leading directly from the top of the dam to the turbine. The height of water above the penstock gates is at present only 12 feet, but this will be increased by about 15 feet upon the completion of the development, the plans for which call for another unit of the same size as the present one.

"Comparatively little storage is required, due to the exceedingly uniform stream flow. However, the storage available will amount to at least 5000 acre-feet, the vast expanse of the lake stretching up the canyon for five miles.

"A novel feature of the development is the fact that forebay and flume were unnecessary, the full capacity of the storage being thus available for immediate use. Additional power can be obtained by a diversion dam immediately below the present structure and a flume three miles in length which will give an equivalent head for another installation.

"The dam of reinforced concrete extends as far below the level of the former river bed as above, the foundations being sunk 125 feet to bed rock."

Her Gift Gave One Poor Lad Comfort

The following letter from a famous newspaper correspondent in France to a little ten-year-old girl in California is of special interest to all of us out here whose womenfolk have given their services to the great cause of liberty in the various ways open to them. Truly, as the correspondent remarks, war plays strange tricks, and from the far-off western battlefield, strewn with its wreckage of dead and maimed, there comes message to this little girl whereby she may know that the gift worked by her childish hands was received and did its part in giving comfort.

The little girl in question is Miss Lucile Newbert of San Mateo, daughter of our Mr. Lee H. Newbert, manager of the Commercial Department. The scarf mentioned in the letter was one of several articles knitted by Lucile for the soldier boys and which were all delivered to the Red Cross at San Mateo.—Editor Pacific Service Magazine.

WITH THE AMERICAN ARMIES IN FRANCE,

November 19, 1918.

From Bernard J. O'Donnell, Enquirer Correspondent, American E. F.

Miss Lucile Newbert, 136 Griffith Street, San Mateo, Cal., U. S. A.

My dear Lucile:

War plays strange tricks and often makes it necessary for followers of the fortunes of fighting men to perform sad duties. Over here where men give their all for a sacred cause—give it freely, cheerfully-the little things of life loom up biggest in the eyes of men. Because this is true, and because from far-off California you sent a scarf, knitted by your own wee hands and addressed to a "Dear Soldier Boy," I am writing you this letter.

On the west bank of the river Meuse near the town of Stenay on the morning of November 10th I came upon a burying squad who were paying their last respects to fallen comrades. As is customary in our army the men of this squad were searching the pockets of the boys who had died on the field of honor, taking out the little trinkets, souvenirs and letters which accumulate in the pockets of a doughboy. These are sent to the parents through regular channels. as I watched the men performing their duty I noticed, among the dead, a mere slip of a boy who had died while trying to assist his pal, who had also been wounded, to a place of safety. Beside his body was a little heap of buttons, belt buckles, a locket and some letters, and on top of all a card. Written in a clear childish hand was a message saying, "Dear Soldier Boy: This scarf was made by a little girl ten years old. Would like to hear from you if you have time to

write." Then followed your name and I looked for the scarf and address. found it-neatly wrapped around his neck and folded on his chest. Evidently it had seen great service and performed well the purpose you intended it should. Here and there it showed signs of almost constant wear. There were three or four small holes in it. One of these was made by the machine gun bullet which called the poor boy "West."

Fearing that the card might be lost if left there until the Red Cross workers gathered up the little pile of personal belongings, I picked it up myself, determining to write you at the earliest convenient moment, telling you of the brave soldier boy-your soldier boywho had died for country and comrade. Being a war correspondent I have had few spare moments since that eventful morning, but now the war is over and time is plentiful, and I am glad I still have the card so that I am able to write and tell you this tragic bit of news. The fact that the boy carried the card with him through the trying days of the war seems proof that he had intended writing to thank you for the scarf.

You are only a little girl, but you have cause to feel proud because your contribution to the boys who fought and died on a foreign battlefield found its way to one who fought well and died well. While he fought your scarf kept him warm. When he died it was folded around his neck, like the caressing arms of a mother.

I hope this little history of the scarf you made will inspire you to do other works of mercy, and that you will find comfort in knowing you heard from "Dear Soldier Boy" even though he writes by proxy.

> Very sincerely, your friend, (Signed) Bernard J. O'Donnell.

The Financial Side of "Pacific Service"

NEW BUSINESS DEVELOPMENT

The following statement of consumers served by the Company indicates that 477,013 were connected to its distribution systems at the close of the year 1918, this being a net gain of 26,356 during the year as compared with a net gain of 24,746 during the preceding year, eliminating from the latter year 4,117 consumers taken over with the public utility properties of the Oro Electric Corporation, which puts this comparison on the basis of normal growth. The gain in 1918 was distributed as follows:

Gas Department	11,251
Electric Department.	
Water Department	50
Steam Sales Department	17
Total	26.356

Inspection of the statement, which covers a period of 12 years, discloses the fact that the growth of the Company's business has progressed steadily from year to year, no retrogression having taken place in any of the departments during this period, and there is every reason to anticipate a continuance of this record during the year 1919:

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF DECEMBER 31ST

December 31st	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907 1908	122,304 131,235	54,772 62,026	5,539 5,753		182,615 199,014
1909	139,503	70,515	6,360	• • • • • • • • • • • • • • • • • • • •	216,378
1910 1911	152,395 176,131	$83,005 \\ 102,024$	$\begin{array}{c} 6,726 \\ 7,257 \end{array}$	101	242,126 $285,513$
1912	194,914	117,065	8,027	211	320,217
1913 1914	208,269 220,360	132,355 $148,957$	8,479 9,051	281 337	349,384 378,705
1915 1916	227,586 $232,748$	$166,149 \\ 178,630$	9,432 10,025	378 391	403,545 $421,794$
1917	243,182	194,374	12,655	446	450,657
1918	254,433	209,412	12,705	463	477,013
Gain in 11 years	132,129	154,640	7,166	463	294,398

SALE OF GENERAL AND REFUNDING BONDS

In December the Company sold to a syndicate of bankers, headed by the National City Company of New York, \$3,500,000 par value of its General and Refunding 5% bonds, in connection with which the following excerpts from the bankers' circular offering these bonds may prove of interest:

"The Company was organized under the laws of California in 1905 as a consolidation of a number of well-established public utilities, including some of the earliest and most successful hydro-electric developments on the Pacific Coast. Its gas business dates back 64 years; its steam electric business 39 years and its hydro-electric development 23 years."

"Since January, 1917, or for a period of approximately two years, the Company has neither borrowed money nor sold any securities except a relatively small amount of its preferred stock, but has been able to provide for new construction from working capital to the extent of more than \$4,000,000. The proceeds of the \$3,500,000 General and Refunding Mortgage Bonds now purchased by you and your associates are to partially reimburse the Company's treasury for advances so made for the additions, betterments and improvements necessitated by the growth of its business."

"In the last four and one-half years, the Company through the sale of preferred stock has added more than \$12,300,000 to the assets securing these bonds. Between January 1, 1913, and November 30, 1918 (a period of 5 years and 11 months), the Company's net cash investment in plant additions was \$22,545,325 as against a net increase of \$2,904,500 in its outstanding bonded debt during the same interval, the additional equity thus created exceeding \$19,600,000."

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER Issued the middle of each month

Published by the
PACIFIC GAS AND ELECTRIC COMPANY
at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

JANUARY, 1919

No. 8

EDITORIAL

Happy New Year!

May the youngster we have just ushered in with joy bells and other appropriate ceremonies fulfill his promise of inaugurating an era of expansion and development in every line of human endeavor!

May we reap the first harvest from the seeds now to be sown in a general condition of increased happiness and prosperity ere old Father Time appears again upon the scene to ring down the curtain upon the drama of 1919!

At a recent conference of the American Electric Railway Association in New York City conditions affecting the electric railways throughout the country and their economic and other relationships with the various communities were gone into very thoroughly, and some important resolutions resulted.

It was the consensus of opinion that the whole structure of the franchise relationship between the railroads and the communities had broken down under the strain of war. The rapid increase in the cost of all material, the extraordinary demands of labor made necessary by the rise in the cost of living, and the alarming decrease in the purchasing power of the nickel, had brought the electric railways of this country face to face with bankruptcy. Practically every other industry except the public utilities, whose rates were regulated by law, had been able readily to adjust its methods of doing business to meet the war demands. In all other departments of our commercial

and industrial life where the economic laws of supply and demand had been allowed free play the inevitable increase in the cost of production had been taken care of in the perfectly normal way of increased cost to the consumer.

Only in those industries where the public had attempted to fix a fair and just price for service rendered and where an artificial standard had been substituted for the natural one had war conditions brought about a complete breakdown. Industry generally was never so prosperous, notwithstanding the increase in the cost of labor and material. The public utilities, in fact, presented the only exception to the general rule of prosperity.

The Association found that these facts led inevitably to the conclusion that the present relationship between the companies and the public, as evidenced by existing franchises with fixed rates of fare, was economically unsound, and that the present system of regulating fares by franchises or commissions was admittedly not sufficiently responsive to violent and radical changes in operating conditions. Under the present system, before a railroad company could justify an increase in its fare it must first show that for a longer or shorter period it had suffered loss under the existing rate, and this loss could not be compensated for by any new rate that might be established. The utility could not take time by the forelock and advance its rates to meet prospective conditions, but must suffer actual loss through a considerable period before even being permitted to apply for relief, which relief could not be made retroactive. Electric railway franchises, once considered most valuable assets, had proved to be liabilities. It was manifest, therefore, that to insure the efficient operation of the electric railways of the country after the war, there must be a recasting of the entire relationship between the railways and the communities they serve. The result of these deliberations was the adoption of the following resolutions:

First—That it is the deliberate judgment of this Association that, in the light of the experience of the industry during the war, the entire subject of the relationship between electric railway companies and the public should have, now and during the reconstruction period following the war, the most earnest consideration of the representatives of both the public and the companies.

Second—That among other things, a radical revision of electric railway local franchises should be made, if the industry is to continue to render efficient service to the public.

Third—That a committee be appointed by the president of the Association, whose duty it shall be to make a study of reconstruction problems, particularly those relating to local franchises, and report their recommendation at an early date.

These findings of the American Electric Railway Association are interesting in view of recent happenings in the State of California, where every electric railroad, without exception, has had to face economic difficulties due to just one thing, namely, the diminution of the purchasing power of the nickel. It is a rule of simple arithmetic that two into one won't go; it follows, therefore, that where the nickel remains by arbitrary law the fixed and immutable measure of charge for street railroad transportation there can be no possibility of business profit to the street railroad enterprise which, in the days before the nickel descended in the monetary scale, conducted its operations on a basis of reasonable profit upon investment.

The people of California, as, indeed, the peoples of other countries, are slow to realize these conditions, or, at least, are slow to acknowledge them. They are helped out in their attitude by political agitators and others who seek advancement through the once popular medium of corporation-baiting. One thing is cer-Until a mutual understanding is established between public service and the public, not based on sentiment either one way or the other but upon the common business principle of supply and demand, to say nothing of fair dealing, the era of prosperity which we are now so earnestly hoping for will not be forthcoming.

In the public utility connection it is interesting to note that the State of California ranks ahead of all other States in the Union, first, in its consumption of electric power per capita, second, in paying the lowest price for that electric power.

The fact that California maintains this proud position is, of course, largely due to the development of hydro-electric energy. Under existing conditions, however, that development is all but at a

standstill. Every possible obstacle has been thrown in the way of development until that timid and fluctuating thing called Capital hovers with fluttering wings in the beyond, unresponsive to our most coaxing invitation. The evil revocable permits, made possible through United States Government control of the public lands in certain States of the Union, of which California is one. has fastened its claws upon public service enterprise and is holding it down. Congress of the United States has it in its power to afford relief from these conditions. Congress can no longer turn a deaf ear to the situation, can no longer plead ignorance of it, for its Senators and Representatives have been duly advised of the facts as they are by men of established reputation who have made public utility service a life-long study. The one question which we are all asking one another at the present time, and to which we demand as speedy an answer as circumstances shall warrant, is: When is Congress going to act?

It is a very simple matter. If the United States Government wishes to retain its hold upon the public lands it will do so. It can, however, assure the private investor some protection for his enterprise by affording him such tenure of his property rights as shall insure him against the mistakes in judgment of some governmental department or bureau.

We regret exceedingly to have to announce that with the close of the present month Mr. K. I. Dazey, our company's Manager of Collections, will sever his connection with "Pacific Service." He leaves us to take the position of purchasing agent with the Schaw-Batcher Company, the well-known manufacturers of pipe, who have recently included shipbuilding in their range of industrial activity.

Mr. Dazey came to this company just eleven years ago and during his term of service he passed, successively, through various grades, including stenographer and secretary to Second Vice-President and Treasurer A. F. Hockenbeamer, assistant purchasing agent and manager of collections. He was active in the affairs of the Pacific Service Employees Association, and served as its chairman in the recent administration. He is able and energetic and in his new undertaking he carries with him the good wishes of all members of the "Pacific Service" family.

TO STORY

OUR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION

фольно помонительного помонитель



Prospects for 1919 promise a season of unusual activity in our Association. The new administration under Mr. Fred George has taken hold with a will and has outlined a program which must result in general benefit, for it means increased membership, increased enthusiasm and a broadening of scope to the end that every member of "Pacific Service," male and female, may realize by practical illustration the personal advantage which is to be gained from enrollment in the ranks of an organization such as ours.

The first meeting of the new board of officers and directors took place on the evening of December 27th at headquarters in San Francisco, Chairman George presiding. The chairman announced his appointment of the following committees:

Program—Chairman, R. E. Fisher, assisted by the following as sub-chairmen: J. Charles Jordan, entertainment section; J. P. Jollyman, technical section; F. E. Oldis, speakers' section.

Membership, R. E. Crossman, chairman. Athletics, Rudolph Jenny, chairman. Advertising and Attendance, H. G. Ridgway, chairman.

Reception, E. W. Florence, chairman. Educational, W. M. Henderson, chairman.

Committee on Women's Affairs, L. M. Evans, chairman.

House Committee, R. J. Cantrell, chair-

Editorial Committee, F. S. Myrtle, chairman.

District Welfare, C. E. Young, chairman.

Honor Roll, A. U. Brandt, chairman. Benefit Commitee, E. A. Weymouth, chairman.

In explanation of some of the foregoing appointments, Mr. George made certain announcements. With regard to the program committee, for instance, he felt that Mr. R. E. Fisher, vice-chairman of the new administration, should be especially urged to retain general supervision of all branches of entertainment connected

with our monthly meetings both in San Francisco and Oakland. The details, under the separate headings assigned to them, will be left to the three sub-chairmen, each of whom would be expected to exert his best energies toward making the meetings of unusual interest to all classes of membership.

The House Committee, with Mr. R. J. Cantrell as chairman, will have charge of the project for the establishment of permanent quarters. Other committees on the list are, in most respects, old ones under new names.

It was decided at this meeting to hold the usual number of gatherings in San Francisco and Oakland, once a month in each city, with the exception of the months of July and August, the vacation period, when the sole fixture scheduled is the annual picnic which always takes places some time the latter part of July. In addition to these, a schedule of outof-town gatherings was submitted and approved. The selected locations for these include San Rafael, San Jose, Marysville, Auburn, Sacramento and Stockton. This list, however, is subject to revision, and possibly there may be some additions to it.

With all this in view, the entertainment feature of our activities will require considerable attention, and it is pleasing to be able to record two appoinments made at a subsequent meeting held January 7th, when the financial budget for the year was taken up in detail. It has been decided during the present season to put on five one-act plays, in which only members of the Association will take part. Mr. Frank L. Mathieu, of Bohemian Club fame, who for several years past has conducted amateur entertainments all over the Pacific Coast, has been retained to put on these plays and is already engaged in rehearsing the first one, which, according to present arrangements, will be given in San Francisco on the evening of Tuesday, February 11th. For reasons which are obvious the title of the play

and the names of the players are withheld, but we may assure our readers that our actors and actresses are putting forth their very best efforts to enable Mr. Mathieu to drill them into shape in good time for the all-important event.

Another appointment made was that of Mr. Lowell Redfield to conduct the musical features, both vocal and instrumental, of all entertainments to be given under the auspices of our Association during the coming season.

In this way, namely, by leaving every department in the most competent hands available, the success of our gatherings is assured.

With regard to permanent headquarters, Mr. Cantrell reports a project under consideration for the acquisition of the old building of the Gas and Electric Appliance Company immediately adjoining our "Pacific Service" offices on Sutter Street, San Francisco. It is estimated that the upper floor of this building, if put into proper shape, will afford excellent accommodation for our members, including assembly room, theater, reading rooms, rest rooms, and everything else that goes to make up a social club of some scope. We shall probably have more to report on this subject in the near future.

On the evening of December 19th, Mr. K. I. Dazey, our retiring chairman, was the guest of honor at a dinner given by members of the Executive Committee and their ladies at the Stewart Hotel in San Francisco. This was a very entertaining affair. Bright remarks were interspersed with song and at the conclusion of the proceedings Mr. Dazey was presented with a silver cigarette case.

That same evening our Pacific Service Employees' Association held its annual dance in Native Sons' Hall, San Francisco. Some five hundred guests were present and the affair was a decided success. Much of this success was due to the efforts of the women members of "Pacific Service" in whose hands were all the arrangements. Excellent dance music, as usual, was furnished by the Pacific Service Orchestra, and during the evening vocal music was furnished by the Athenian Quartette and by Mrs. E. W. Florence, wife of our manager at Redwood City. The committee in charge of arrangements who worked so untiringly to make the dance a success was headed by Mrs. N. L. McClure and Miss Al Dean Shockley.

IN MEMORIAM—ALBERT J. CROWLEY July 27, 1888. December 27, 1918.

With deep sorrow we have to record the death of Mr. Albert J. Crowley, secretary to the second vice-president and treasurer, who, on December 27th last, succumbed to an attack of double pneumonia resulting from influenza.



"Bert" Crowley, as he was called by his comrades of "Pacific Service," was only thirty years of age. He was born in San Francisco on July 27, 1888. He received his education at Commercial High School, after graduating from which he entered the employ of the Pacific Coast Steamship Company. Later he entered the service of the West-Union Telegraph Company, resigning this latter position to accept a position with the Government Reclamation Service in Nevada. Upon the completion of this work he was engaged as private secretary to Dr.

Rupert Blue, now United States Surgeon General at Washington. When Dr. Blue left San Francisco for the Nation's capital, Bert Crowley decided to remain on the Coast and secured a position with the Johnson-Locke Mercantile Company. This position he resigned to enter the "Pacific Service" family, his engagement with our company covering a period of approximately eight years.

In October, 1917, he was inducted into the service of the United States and was sent for training to Camp Lewis. After some two months of this experience he was rejected on account of defective eyesight and returned to his position in Mr. Hockenbeamer's office. Later, however, he was again taken into the United States Army and while on duty he contracted the attack of influenza which later developed into a fatal malady.

Bert Crowley had a most engaging personality. He was not only active and energetic in whatever duties he undertook, but he was to the fore in athletics and outdoor sports. His passing at so early an age has deprived "Pacific Service" of one of its most promising young men.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

Extract from letter of Lieutenant R. H. Stevenson, 316th Field Battalion Signal Corps, 91st Division, written on October 6th, just after the fight at St. Mihiel:

"I have not written you for some time as things have been moving so fast of late that there has not been much time for letter writing. Right now we have been through the fight, rushed the bloody

Hun back always and have been relieved for the purpose of rest and reorganization. It was a hard old battle and the division suffered its share of casualties.

"As for battle—I'm not so strong for it. My idea of soldiering is a cantonment with pink teas and other fancy trimmings. I guess every one feels the same way about it-but it is remarkable what a day or so of rest does—every one is pepping up and ready to go in again. We were in the line for eight days under heavy shell fire all the time - including the abominable gas shells. The excitement of the thing carries you through but the constant sight of ruin

and destruction—of killed and wounded—becomes very monotonous and drab. Don't think that the boys are back-sliding for they are not. Every one is ready to go through with the thing—it is a disagreeable job, that's all.

"The worst sensation of all is the hi-explosive and snipers. H. E. when it does find a target ends things immediately. They shelled us about six or eight times a day with that. It would last for about ten minutes, popping all around, then it would be over for a while. As long as you keep busy you don't notice anything, but during the lulls your ducking ability becomes quite pronounced. An airplane would sail over us at intervals and drop a bomb which fortunately did not get any of our particular party. Right now our bivouac is in a forest and we're comparatively comfortable in sheltered tents. No

facilities for bathing, but better than nothing at all."

The following letter was written by Merl M. Bremer to Mr. Downing, under date of December 15th, from Woinville, France:

"I guess the last letter you received from me was written just before the

armistice was signed, and we were all prepared to give Germany one of the worst blows she ever got, if she had not signed the armistice.

"Fresh troops in the trenches and piles and piles of reserves.

"The artillery concentration was enormous. I had my little job assigned me, that of connecting up the broken and shell torn light railway across No Man's Land. I am resident engineer on about 150 kilometers of 'Chemin de Fer Petit,' or better, about 94 or 95 miles of Light Railways. The construction and maintenance end of it. It was very interesting work while we were going ahead, but the whole army now has

been turned into one big salvage gang and our work now only consists of maintenance of this narrow-gauge for salvage trains. I am still in command of my company and as this organization has a full complement of captains, I don't know as I will be able to land a captaincy, but I am drawing a captain's pay now, as I have had charge of this company more than three months.

"It is very wet and rainy in this part of France. It seems as though the land never dries out. That makes it kind of hard to keep the troops in physical trim, and this waiting, Gee! it taxes a man to the utmost to vary the monotony so the men will be contented, but so far it has been O. K. The men sing at nights and I keep them at it or find out the reason."



Lieut. R. H. Stevenson, 316th Field Battalion Signal Corps, 91st Division. (Formerly of the O. & M. Department.)

F. T. Henderson, engineer first class on

the U.S.S. Schley, formerly of the Steam Department of Alameda County District, writes:

"We left New York with a slow convoy the day after the armistice was signed. We were at sea eight days and it sure was a rough, stormy trip. We could not sleep and had a hard time trying to eat, so were a tired, worn out crew when we made the Azores Islands port. We spent four days there, then left for Devonport, England. Spent our Thanksgiving Day aboard and we sure did have some feed, all we could eat, so were a happy bunch.

"The mayor of Plymouth gave us a big banquet and entertainment the first night

we were in England and surely treated us royally with lots of good things to

"We were slated for duty over here until the 1st of May, unless our orders are changed, so expect to see a lot of Europe before I come home. So far I have stood this life very well and have never felt better. We have good quarters, plenty to eat and a good bunch of men in the engineers' force.

Mr. Hall, manager Santa Rosa, has written concerning two of his former employees:

"Mr. Percy B. Hanson, December who until 5, 1917, was one of the standbys of the Santa Rosa District, and who at that time

severed his connections with our organization to go to serve Uncle Sam, returned with his release just a year and two weeks from the time that he left us. He is looking well and hearty, and while he did not see as much active service as he would personally have liked, he gave of his best to his country, and is now under release, he having been in the Naval Reserve and subject to call for three years vet to come.

"This district is just in receipt of a nice long letter bearing Greetings of the Season from Mervyn F. Ross, who severed his connections with this district to join the navy in June, 1917. Mr. Ross, at the time of his enlistment, went as a sailor, but subsequently, under advice of his officers, transferred to the yeomanry, since which time he has made splendid progress and is now rated as chief petty officer on board the U. S. S. Nebraska. He has seen much active service, having made trips to South America and a number of convoy voyages to France, and writes that he will again leave for France on the 31st of December to bring a lot of our boys home from 'Over There.' Mr. Ross, having done convoy duty, is entitled to wear the overseas service stripe, and he says that when he comes back we will hardly know him for the amount of hardware that he wears on his person."

Mr. Owen, superintendent of Redwood District, received the following letter from Corporal E. V. Haines, 316th Engi-

neers. The letter was written on Thanksgiving Day at Wacken, Belgium:

"Belgium is a pretty country, almost all of it being rolling hills, which are nearly all under cultivation. There is field after field of turnips, which seem to be about the only vegetable they raise. From here back to Ypres is all low swampy country and is badly shot There is absolutely nothing left of the city of Ypres, and for miles around it there is not a foot of ground which has not been turned over by the shelling and the water in these holes poisonous with tard and other gases. The last time we went into action in this Flanders front was at Andenarde, which

is a good sized place. There are five big canals running through the town and we put bridges across them for troops and artillery, as the Germans destroyed them when retreating. We just got the bridges finished with the Germans outside the town when the armistice was signed. On the Argonne in France the engineers were used as doughboys and went "over the top." I was wondering before we went over if I would feel scared, but soon four."

found out that there is no time to get When we met the Jerries we dropped the lead into them so hot that the infantry retreated. I have no scars or wound stripes, but if holes through my uniform counted I would at least get



Lieut. Harry Abernethy, 7th Balloon Company, A. E. F. (Formerly of Alameda County District.)

Under date of November 24th, Crawford C. Hill wrote an interesting letter from Belgium describing his experiences since leaving Camp Lewis. He does not seem to be greatly in love with the various forms of transportation met up with between Camp Lewis and St. Mihiel, where his ambulance corps was a part of the reserves for the great drive.

"It was raining most of the time and we slept, ate and lived in and on mud and water, hardtack, bully-beef and coffee. It was so dark in the forest where we camped at night that you could not see a foot in front of your nose. Absolutely no lights were allowed. This drive was pulled off so well that we were not used, and they put us on trucks and started us for the Argonne where we were in the

vicinity of Void Toul Sector. We were camped in some woods and the Boche batteries were shelling the railroad near by. The 91st Infantry were in the trenches waiting to go over and the Boche kept sending over gas shells. On Sep-26th tember the 91st went over, and we followed right behind. We had our first dressing station above Avo-There was

so much work to do that we had the German prisoners carry in their own wounded. I was working four Germans with a big pocket knife for a weapon. You should have seen the wonderful dugouts that the Germans left here, all equipped with electric lights, telephones, piped water, and every other convenience. We had three men wounded in this battle."

Crawford adds that they had their dressing station all set up at a new location in Belgium when two officers came by and told them that the armistice had been signed. They had heard so many rumors that they did not believe it until some time afterward. Like all the others he is now anxious to come back home.

Lieutenant Harry Abernethy, formerly of the Electric Distribution Department, Oakland, has had a varied experience since he left the United States as a sergeant in the Engineers. Upon arriving in France he transferred to the Heavy Ar-

tillery and spent three months in school, coming forth with the commission of 2nd lieutenant. He then took an examination with 160 others, to obtain admission to the Balloon School and forty-seven were picked, among whom was Lieutenant Abernethy.

He arrived at the front three days before the armistice was signed and was actually engaged in observing and controlling artillery fire from a balloon at the time the firing ceased. He states that on the 11th day of the 11th month and at the 11th hour he was in a balloon one thousand meters above the earth. We venture to say that since Harry has handled so many meters in days gone by a thou-

> sand more or less makes little difference to him.

Harry is now located at Ville sur Causence with the 7th Balloon Company.

Charles Cowels, the superintendent of the Carbon Fuel Department, is a proud father of two boys in the service, one a wagoner in France in active service at the front, and the other, C. M. Cowells, located

years of age, has for the past several months been instructor of navigation and ordnance. He was promoted to gunner's mate, first class, the first part of December, and on January 1st was made master at arms. He will shortly obtain his commission as ensign and intends to enlist for four additional years in the navy.



P. B. Sheehan (fourth from left) of Base Hospital No. 47. (Formerly of the Collection Department, San Francisco District.)

P. B. Sheehan of Base Hospital No. 47 writes the following very interesting letter concerning the local celebration upon the signing of the armistice. Mr. Sheehan was formerly with the Collection Department of San Francisco District:

"It was about 2 o'clock yesterday and everyone in the office was trying to finish work before the news came that the war was over. The enemy had until 11 A. M. to answer, we knew, but the wires were so busy we couldn't hear anything. Hence we hurried along and I had about a half an hour's work to do when a shout was heard something like the noise of the

crowd at a big football game when you are a few blocks away. There was no more work. The gang at the quarter-master's office had interpreted the news from the French yardmaster and the shouts were the result. I dashed out to the main road, but was late; it was filled with French employees of the camp who had guessed the cause of the excitement at the depot. I walked into our headquarters just as the communique was typed and a friend gave me a copy: 'As a result of signing of the armistice at 5 this morning all hostilities have ceased on the American front.' Words will never paint the picture of the scene. When I again came into the company street the French workers had a big flag twenty feet high with the Allies' colors on top, carrying it amidst wild enthu-Wounded men threw crutches on high and hobbled to where they landed, only to repeat the act.

"After the excitement had abated just a little the bugler from the labor battalion below us started things again. He blew recall from war. You understand every day at 4:30 the call is sounded to those in the field to cease their labor and come to prepare for supper. So this night it had a peculiar significance: 'Come in, the war is over.' The yell that greeted him when he finished was perhaps typical of one that would have been given Pershing had he walked along the company street just then. So he repeated the call five or six times with as much enthusiasm.

"About 6 o'clock we started for town to witness the fete. Lights were shining in the residential section as we passed on our way to the 'Third and Market' of this little town of 15,000. China lanterns were strung in gardens where before we had seen only dismal darkness, so stringent were the electric light laws. Finally beat of drums hurried us along to see the end of a parade of children with torches, flags and drums, which reminded one of former Hallowe'en night parades. The town was decorated as by magic. Flags waved from every window.

"After a few hours of this it was 9 o'clock, and, as our passes read 9:30, time was limited and we wended our way toward camp, enjoying the songs of the crowd going home, a fitting end to the night which made Pershing's prediction come true: 'Heaven, hell or Hoboken by January 1st."

Private Charles Queirolo writes from Iseghem, Belgium, under date of September 2nd. He is with Company E, 316th Motor Supply Trains, and has traveled over all the fighting front of France. He

says in part:

"We moved to Troussey September 12th, September 13th picked up Cadillacs and trucks at Nancoise and went to Uaudoncart. On September 26th the drive started, that is when the Wild West Division went into action in the Argonne Forest. Believe me that was some fight."

Harry R. Jenkins of Battery "B," 346th Field Artillery, writes an interesting letter dated December 9th, describing his unique and various exeriences since he has been on French soil. Harry Jenkins was formerly on the Oakland office force.

Private E. M. Szczepanski, Company A, 29th Engineers, sent a sample of his company's handiwork in the way of a beautiful Christmas card. He states that his regiment is a "printing, lithographic and photographic outfit," and the card which he sent bears out his statement conclusively. It has a well-designed Christmas greeting from the 29th Engineers to the "home folks," and also bears "Everything, includa Christmas poem. ing the phrases," being designed, engraved and printed by the 29th Engineers.

Lieutenant R. O. Waltham writes that he was assigned to the 166th Aero Squadron on October 1st, this being one of the youngest squadrons operating as day bombers. He states, however, that they made a good record in the short period that they operated, losing only one man and making no unsuccessful raid. says that bursting shrapnel around an airship trains a fellow's nerves so that 60 k. v. "shorts" seem very simple. His squadron was subsequently attached to the Third Army and was headed for the Rhine when Lieutenant Waltham wrote on November 26th. He says that he has now seen "three strata of France, the untouched, the bombarded and the riddled," and that the farther he goes the more readily he would welcome a few more months of war, if it were only staged beyond the Rhine.

We are indebted to the wife of Sergeant Alexander Pringle, whose picture appeared in last month's issue, for the news that, although severely wounded in battle in August, he is now recovering rapidly and hopes to be discharged from the army within a month.

"Pacific Service"



Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF JANUARY 15th, 1919

Total Number -

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Baugh, Sergt. Clive Everett
Behrena, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Arthur M.
Bremer, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler. Joseph, Jr.
Buzzell, Sergt. Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass. Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
Tonuncon, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.
*Died of pnet

Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis. Fred Charles
Lindblad, Lieut. Wm. N.
Lindstrom, W. J.
McDermott. Louis Wm.
McDonald, Hayward C.
Mel, Capt. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
Murgatroyd, Robert
Murphy, Lieut. Elmo Neil
Nordling, Wm. Hammond, Everett E.

Osborn, Lieut. Norris W. Parker Charles G.
Regan, Arthur
Rossiter, Sidney Benjamin
Rubenatein, Frank Sam
Schuster, Lieut. John C.
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard H.
Sultan. Lieut. Walter D.
Terhell, Sergt. Jacques
Thomas, Lieut. G. M.
Trowbridge, Capt. Alfred L.
Trudrung, Harry
Watson, John
Wilkins, R.
Wilhelm, Clarence
Williams, Lieut. Leroy C.
Wright, Lieut. Ernest M. Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn.. October 14th, 1918. ‡Died of pneumonia in San Francisco, December 27th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry
Anderson, Gorpl. Harold M.
Barr, John Milton
Barrett. George
Bates, Byron M.
Belford, William
Bennetts. Herman V.
Bertolacci, Ensign R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Gooper, Walter Haines
Cormack. Douglas Leslie
Cowell, Charles Merritt
Currier, J.
Deuschle, Fred W
Dueco, Daniel
Dupuoy, Max
Erickson, William
Fairchilds, F. C.
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D. Gay, Earl D.

Hansen, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Sergt. Ivor
Keesling, Lieut. Homer Grant
Kendrick, Eldon W.
Klinefelter. Sam
Knopla, Charles
Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt. George L.
Maslin, Capt. Francis I.
Massoni, Dante
McKenzie, Malcolm M.
Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosber, James Nelson
Nelson, George A.
Nelson, Norcal
CHIGO DISTRICT

Oswald, James
Parsons, James
Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Ensign Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Frederick J. Smith, Stuart N.
Southerland, Frederick J.
Sprott, Bryan
Stephens, Alden Raymond
Thompson, Clark C.
Veirs, Harry D., Jr.
Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

Curtis Ray E.

CHICO DISTRICT COLGATE DISTRICT

Andrews, Crist C. Broyles, George B. *Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Haymond Carrol Dusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E. Beaumont. Floyd Burton Boyd, William Thomas Compton, John A.

Hunt. Edward C.
Johnson, Oliver Ray
Meagher, Francis Joseph
Randall. Earl Roscoe
*Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

Kelly, A. T. Knight. Lieut. Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Truitt, James O.

Mellerup, Fred H. Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Sergt. Joseph A. Teachenor, J. L.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W. Johnson, Samuel T

Carlton, Ben F. Garlton, Ben F.
Drendell, Paul
Ferrari, Corpl. Clyde
Getchel, Clyde
James. Ed.
Judd, R. H.

Alstrom, Frank A.
Brown, Ira A.
Burkleo, Dan
Buttetworth, William Z.
Corlew, Harland Hall
Devlin, John A., Jr.
Dickson, John
Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. *Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

Gash, Lieut. Frank Taylor

DRUM DISTRICT

Lohse, Lieut. Marcel P. Michael, John L.

ELECTRA DISTRICT Kimball, Oliver M.

Leonard, Arthur L. Leonard, Ed. G. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Gomes, Carl Gomes, Garl
Holmes, Stanley E.
Howard, Frank P.
Krog, Corpl. John P.
Long, Percy E.
Maze, Norman E.
Nair, Harold

MARIN DISTRICT Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

De Rosa, J. De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Chester H.
Hefner, Joseph Philip
Holdridge, H. Earl
Holmgren, J. E. Hubhard, Sergt. H. W.
Johnston, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

*Killed in action on or about November 9th, 1918.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Gorpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. G. J. Shearer, Ensign William Young, Joseph P.

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton Patterson, Sergt. A. Earl Ryan, R. Stearns, O. J. Strarns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

NAPA DISTRICT

Mayfield, James M.

Osborne, Lieut. Butler J.

Snow, Wilbur Roland

Taylor, Albert P. Taylor, Lieut. Cary P.

Sutcliffe, Lieut. Harold T

Fairchilds, John H.

NEVADA DISTRICT

Beloud, Leon C. Earl, George Snell, Verne C. Richards, James

PETALUMA DISTRICT

Jones, Claude O.

PLACER DISTRICT Leary, Jerry

REDWOOD DISTRICT

Anderson, W. O. Boulware, Wm. F. Bryggman, Emil W. Budalich, Oialy A. Gaussou, Jean Casey, T. Chase, Corpl. H. A Clausen, J. J. Cullen, John P.

Beveridge, James

Kent, James Cody

Deloy, H.
Fulton, Lient. L. J.
Haaker, Frank
Haines, G. V.
Harcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.

Jennings, Edward J.
Johnson, Corpl. Hjalmar
Kirkpatrick, G. B.
Laughlio, Burton E.
Likely, Lieut. R. D.
Likely, H. F. Lundquist, Leonard L. Mengel, Henry

*Killed in action in France, Oct. 1st, 1918.

SACRAMENTO DISTRICT

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baugh, R. W.
Belluomini, Primo J.
Bigelow. Ernest C.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Busses, George D.
Cameron, John Cameron, John

Coyle, William Doyle Goyle, William Doyle Crandall, Geo. H. Daigle, John M. Dick, Silas S. France, Fred Rhodes Hochderffer, W. E. Hornbeck, John Chas. Johnson, William Max Klein, Earl Everett Logan, Raymond M. Mathews, Maurice L. Melhy, John Miller, J. E. Mullen, Ira J. Newington, David O'Connor, Edward T. Olsen, Alhert Raymond, Harold A. Richeson, Merle C. Riggles, R. F.

Roach, Martin L. Ross, Chas. Archie Ross, Harold Lee Sanford, Walter W. Sartori, Adolph Shachen, Parker I. Sattori, Adolph Sheehan, Parker J. Smith, Joseph Lee Smith, Myron M. Stiewer, Winlock W. *Suggett, Archie Dean

Peers, G. A.
Raynard, Duncan
Sampson, L. E.
Sehben, J. E.
Smith, Corpl. R. F.
Strofeld, George
Thane, Alexander
Uhlenberg, Louis H.
Yost, Charles Z.

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.)

SACRAMENTO SUPPLY DISTRICT Jackson, Claude E. Jones, Verne H. Kinz, William J.

Beeler, Joseph J. Black, Marion Derr, Harvey Dyer, John B.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Barriere, Ernest Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT Gibney, Walter Haiden, Walter Inteman, R. Jacohsen, Earl D. Keating, Arthur Edward

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowera, Sergt Harold S.
Francouer, Raymond J.
Gewirtz, A.

Gilhuly, Aloysiua M.

Koch, Carl Locke, llarry M. McKenzie, Alfred

Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E. Wilson, Reginald St. Clair

SAN FRANCISCO DISTRICT-Concluded.

COLLECTION DEPARTMENT

O'Connor, Charles A. Oliver, Adrian Pierce

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

Shea, Cornelius Thomas Sheehan, Peter Burnett

ELECTRICAL DEPARTMENT

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Collins, Geo. Washington Fitzgerald, Paul

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Capt. Guy A.
Beatie. Gerald
Biehl, Lieut. P. F.
Brady, George B.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F
Clark, Lyle G.
Cook, Frank L.
Cook, Joseph
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick Donovan, Patrick Drew, Harold Durand, Milton J. Eichhaum, Sergt. C. W., Jr. Ellis, Clarence L.

Estes, Sergt. Melville N.
Fogalsang, W. J.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerber, Harold
Gilbert, Paul H.
Glasson, Pearce
Griffin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hildebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Kohylinski, Walter
Locks, Herman J., Jr.

Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
Meyers, Alfred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Ostrowski, Ray
Parker, A. J.
Peterson, Ernest Andrew
Peterson, Ernest F.
Pippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
Seifkes, Sergt. Lane F.
Shields, Lieut. Garrison F.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Capt. R. D.
Stohler, Adolph
Sundberg, Emil
Sweeney Michael.
Szczepanski, Edgar M.
*Thompson, Capt. A. R.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Waters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action September 29th, 1918.

GAS DISTRIBUTION DEPARTMENT

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Alb Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Corbett, Allen Corbett, Victor

Corbett, Victor Elliott, Gerald Equi, John Lang, R. T.

Locks, Herman J., Jr.

Pape, William Frank Raspadori, Joseph Carl Richter, Herhert Rutledge, Arthur B. Schwartz, Joseph Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

GAS MANUFACTURING DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Perassa, Louis Polson, Edward

Queirolo, Chas. Quigley, James L.

Hallahan, Maurice Hanley, Leo J.

Ambler, J. R. Black, John Doherty, James

*Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

RECORDS DEPARTMENT Hughes, Percy Anthony

McDonald, Wm. John

Abercrombe, Corpl. Donald Andresen, Corp. Carl, Blair, Walter B. Clark, Richard Clark, William

Faight, Corpl. Forrest W. Flint, Lieut. Arthur P.

Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Burns, Raymond J. Caldwell, Licut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix, Francis L.

Bischoff, O. E. Boots, Benjamin SAN FRANCISCO SUPPLY DISTRICT

McCarthy, John McNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J.

SAN JOAQUIN DISTRICT

Hunt, Lieut. Herbert Tevis Martin, Lieut. David G. McIsaac, Dan Olsen, Melvin L.

SAN JOSE DISTRICT

Candello, Lorenzo Carroll, Louis Charboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Erbentraut, Edwin Otis Faulkner, Chas. C. Fiman, Edward F. Frederickson, L. C. Frederickson, J. C. Frier, George S.

Hale, Lieut. C. St. John Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Johnson, Capt. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J. Riley, Norman Sidney Young, C. Cuyler

Riesen, Alvin Rowe, Lieut. Ernest W. Roy, Harvey Leon Singleton, Paul Singleton, Faul Sprung, Lieut. Stanley W. Stojanovich, Tony Suess, Walter R. Tarp, James P. Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Ross, Mervyn F.

Short, Ralph C.

Morgan, Mervin E.

Howard, Everett J.

SOLANO DISTRICT

Moore, George R.

VALLEJO DISTRICT Argabrite, Lieut. Walter M. YOLO DISTRICT

Grandquist, K.

AUXILIARY ROLL OF HONOR

RED CROSS

Curtis, Miss Letitia A. (Head !Office)

Y. M. C. A. Traxler, Jesse E. (Alameda Co. District)

PACIFIC GAS AND ELECTRIC COMPANY

A CALIFORNIA CORPORATION

Managed by Californians

Operated by Californians

"PACIFIC SERVICE" REPRESENTS

4,738 employees in all departments.

\$134,000,000 capital invested in gas, electricity, railroads and water plants.

37,775 square miles of territory in which it operates.

8,100 stockholders.

32 counties of the State in which it transacts business.

450,657 consumers served with gas, electricity, water and steam as of Dec. 31st, 1917.

1,803,108 people served in 32 counties.

178 cities and towns in which it transacts business.

\$5,750,000 annual wages paid employees in 1917.

\$1,017,099 taxes paid to the State of California in 1917.

\$236,140 taxes paid to the Federal Government in 1917.

164,075 horsepower developed in 14 electric water-power plants.

106,568 horsepower developed in 3 electric steam plants.

270,643 total horsepower developed in 17 plants.

587,144,061 k. w. hrs. sold in 1917.

8,537,925,100 cubic feet of gas sold in 1917.

18 gas plants.

30,000 miles of wire used in distributing electricity.

2,878.6 miles of mains used in distributing gas.

835 miles of mains and ditches used in distributing water.

700 miles of track of street railways operated and supplied with power.

47,858,362,262 gallons of water stored in 70 lakes and reservoirs. This amount of water would supply the city of San Francisco for 950 days.

53,672 acres of land owned in California.

2,923,932 barrels of California oil used in 1917.

70,318 horsepower in agricultural motors depending on "Pacific Service."

294,299 horsepower in mining, electric railways, manufacturing and other motors depending on "Pacific Service."

59,216 street lamps, gas and electric, lighted by "Pacific Service"

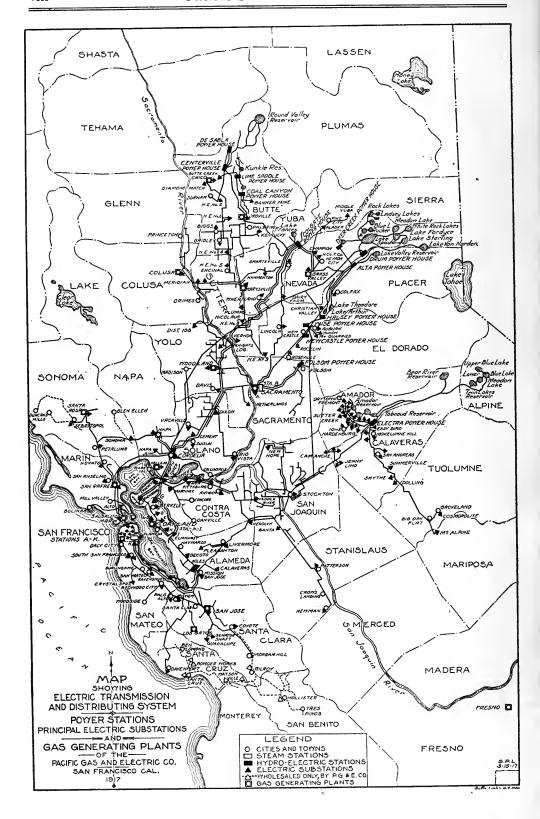
3,983,042 incandescent lamps nightly lighted.

636,855 horsepower connected to system. This represents the equivalent of 5,095,000 men.

PACIFIC GAS AND ELECTRIC COMPANY

Head Office: 445 Sutter Street SAN FRANCISCO

Branches in all principal cities and towns of thirty-two counties in North-Central California



Pacific Gas and Electric Company Furnishes

"PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	ÐI	RECTLY	INI	DIRECTLY	TOTAL			
	No.	Population	No.	Population	No.	Population		
Electricity	128	1,210,830	48	132,825	176	1,343,655		
Gas	51	1,219,690	2	8,600	53	1,228,292		
Water (Domestic)	11	57,302	8	19,300	19	76,600		
Railway	1	76,000	1		1	1,228,292 76,600 76,000		

CITIES AND TOWNS SERVED BY COMPANY:

Place	Population	Place Por	ulation	Place Po	pulation	Place Po	pulation
!Alameda		El Verano	400	MokelumneHill	300	² San Quentin	2,500
Albany		Emeryville	3.000	Morgan Hill	750	¹San Řafael	6.000
Albany					2,500	San Karaer	
Alvarado	700	Esparto	250	Mountain View		Santa Clara	6,000
Alviso	550	Fairfax	250	Mt. Eden	210	'Santa Cruz	13,600
4-4Amador Cit	y 1.100	Fairfield	1,000	² Napa	6,500	¹ Santa Rosa	11.000
Angel Islan	d 280	Fair Oaks	300	1-8Nevada City	2.900	Saratoga	300
Antioch		'Felton	300	Newark	505	Sausalito	3,000
Aptos		Folsom	2,000	Newcastle	950	Sebastopol	1,950
			225		1,200	Challantia	
Atherton		Forestville		Newman	1,200	Shellville	200
6-6Auburn	2,800	¹Fresno	48,867	Niles	1,000	Sheridan	250
Barber		Gilroy	2,900	4Novato	400	Smartsville	300
Belmont	375	Glen Ellen	900	2Oakland	225,000	'Soquel	400
Belvedere	550	¹-¹Grass Valley	5.200	Oakley	200	Sonoma	1.290
Benicia		Gridley	1,800	*Occidental	600	South San	-,
Ben Lomon		Grimes	350	*Oroville	5.000	Francisco	3,750
Berkeley		'Groveland	250	Pacheco	250	2-7Stanford Uni-	5,750
Del Keley			780	Palo Alto	6.000	Staniold Om	2.600
Biggs	500	Guerneville		- Paio Aito		versity	2,600
Bolinas	200	Hammonton	500	Paradise	500	*- *Stockton	42,000
Broderick		'Hayward	4,000	Patterson	500	Suisun	800
*Burlingame	4,000	² Hillsborough	950	Penn Grove	300	Sunol	340
Campbell	700	⁶ Hollister	2.500	Penryn	250	Sunnyvale	1,650
Capitola		6-8Ione	1.000	Perkins	250	Sutter City	250
Cement		Irvington	800	'Petaluma	7.500	6-Sutter Creek	1.300
Centerville		4- Jackson	2,100	Piedmont	3.500	Tiburon	350
		**************************************	500	Pike City	200	Tres Pinos	300
Chico		*Kentfield			1.800	Tres Pinos	
*Colfax	500	Kenwood	200	Pinole		Vacaville	1,250
*Colma		Knights Land-		Pittsburg	6,000	²- [¢] Vallejo	15,500
*Colusa	2,000	ing	400	Pleasanton	1,500	Wineburg	200
Concord	850	² Larkspur	2,000	Port Costa	1,000	Walnut Creek .	500
Cordelia	300	6-8Lincoln	1.500	² Redwood City.	4,200	Warm Springs.	200
Corte Made	era. 350	Live Oak	300	1-6Richmond	16.500	Watsonville	6,000
2-1Cotati		*Livermore	2,500	Rio Vista	1.000	Wheatland	500
Coyote	200	Lomita Park	450	Rocklin	900	Winters	1,200
Crockett		Loomis	450	*Rodeo	300	Woodland	5.000
			500	* Rodeo	4.200		
Crow's Lane		Los Altos		Roseville		Woodside	225
² Daly City.	5,500	Los Gatos	3,000	² Ross	900	Yolo	350
Danville		Madison	250	'Sacramento	76,000	Yuba City	1,750
Davenport.	300	Mare Island	500	San Andreas	750		
Davis	1,700	Martinez	3,500	'San Anselmo	3,000	-	
Decoto		² Marysville	6.000	² San Bruno	1,500	Total Cities	
Dixon		Mayfield	1.100	San Francisco	580,000	and Towns1	.422.522
'Drytown		Menlo Park	1,100	² San Jose	45,000		
Diytown.		Meridian	225	San Juan	550	Add Suburban	
Duncan's M			300		5.000	Population	400.586
Durham	300	Millbrae		San Leandro		1 opaiation	-00,000
'-Dutch Flat	750	Mills	350	San Lorenzo	400	-	
Eldridge	500	Mill Valley	3,200	San Martin	200		
*- El Cerrito .	1,200	Milpitas	350	'San Mateo	6,000	Total Popula-	
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	1,823,108

Unmarked—Electricity only.

Gas only.

Gas and Electricity.

←Gas, Electricity and Water. ←Gas, Elect. and St. Railways. ←Electricity and Water. Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	.209,412
Number of Gas Consumers	.254,433
Number of Water Consumers	. 12,705
Number of Steam Consumers	. 463
Total number of consumers	.477,013

Operates 14 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

TVERY investor needs 4 the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y.
Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORR, MD.
MUNSey Building
BOSTON, MASS.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO, ILL. Marine Bank Blob CHICAGO, ILL. 137 So. La Salle Street CINCINNATI, OBIO Fourth Natl. Bank Bldg. Fourth Natl. Bank Bldg. Winnbapolis, Minn. McKnight Building

DAYTON, OHIO
Mutual Home Bldg.
DENVER, COLO.
First National Bank Bldg.
DETATION OF FICES

NEWARK, N. J.
790 Broad Street

NEW ORLEANS, LA.
301 Baronne Street
PHILADELPHIA, PA.
1421 Chestnut Street
PITTSBURGR, PA.
PITTSBURGR, PA.
INDIANAPOLIS, IND.
Farmers Bank Bldg. Conn. Mutual Didg.
IndianApolits, Ind.
Fletcher Sav. & Trust Bdg.
Formtand, Me.
Kansas City, Mo.
Republic Building
Los Angeles, Cal.
Hibernian Building
Management Mana

PHILADELPHIA, PA. 1421 Chestnut Street

PITTSBURGH, PA. Farmers Bank Bldg.

PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. SAN FRANCISCO, CAL. 424 California Street SBATTLE, WASH. Hoge Building Springfield, Mass. Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W WILKES-BARRE, PA. Miners Bank Building

Acceptances

Bonds

Short Term Notes





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson Henry E. Bothin John A. Britton W. H. Crocker F. G. Drum John S. Drum F. T. Elsey D. H. Foote W. G. Henshaw A. F. Hockenbeamer JOHN D. MCKEE
JOHN A. McCandless
C. O. G. MILLER
NION R. TUCKER
GEORGE K. WEEKS

OFFICERS

F. G. DRUM										President
										Vice-President and General Manager
										Second Vice-President and Treasurer
D. H. FOOTE	٠									. Secretary and Assistant Treasurer
										Assistant Treasurer
Chas. L. Barrett .										Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM														Consulting Engineer
W. B. Bosley														Attorney
														Property Agent
														er Claims Department
C. P. Cutten										. A	ιti	tc	rn	ey, Rate Department
P. M. Downing .						C	lhi	ef	E	'n	gi	n	er	Electric Department
E. B. Henley											M	a	na	ger Land Department
														. Purchasing Agent
J. P. Jollyman :								\mathbf{E}	ng	ir	e	er	E	dectrical Construction
E. C. Jones								(h	iei	ŀ	Œ	ıg	ineer Gas Department
F. S. MYRTLE								ľ	Иŧ	n	ag	ŗе	r.	Publicity Department
L. H. Newbert .							Ν	1a	na	ıg	er	(co	mmercial Department
														Ianager of Collections
														General Auditor
														intendent of Supplies
W. G. VINCENT, JR.														Valuation Engineer

DISTRICT MANAGERS

DISTRICT		MANAGER
Alameda County	Oakland	F. A. LEACH, JR.
Снісо	Chico	H. B. HERYFORD
Colgate	Colgate	MILES WERRY
Contra Costa	Martinez	Don C. RAY
DE SABLA		
Drum		
ELECTRA		
Fresno		
Marin		
Marysville		
Napa	Napa	C. D. CLARK
NEVADA	Nevada City	L. H. HARTSOCK
Petaluma	Petaluma	H. Weber
PLACER		
REDWOOD	Bedwood City	E. W. FLOBENCE
SACRAMENTO	Sacramento	C. W. McKillip
San Francisco	San Francisco	HENRY BOSTWICK
San Joaquin	Stockton	J. W. HALL
San Jose	San Jose	J. D. Kuster
Santa Rosa	Santa Bosa	M. G. HALL
Solano	Divon	C. E. Sedgwick
Vallejo		
Yolo		
• • • • • • • • • • • • • • • • • • • •	Hoodand	

Pacific Service Magazine

Volume X



Number 9

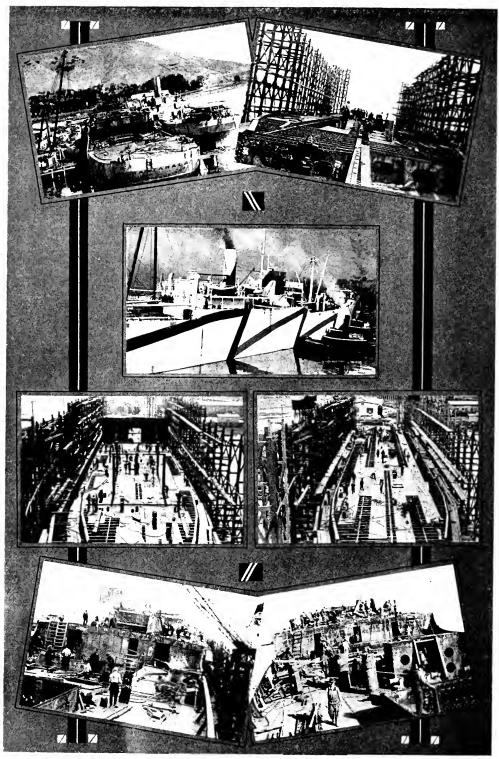
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for February, 1919

THE PROCESS OF SHIP CONSTRUCTION IN VARIOUS STAGES	Frontisniece
SHIPBUILDING ON SAN FRANCISCO BAY— THE GREAT SCHAW-BATCHER PLANT AT SOUTH SAN FRANCISCO · · · · · ·	
THE GAS BILL IN FINAL ANALYSIS	C. L. Barrett 277
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION	280
HOW "PACIFIC SERVICE" PROVIDES FOR THE COMFORT OF WOMEN EMPLOYEES	F. S. M 287
THE "PACIFIC SERVICE" ROLL OF HONOR	290
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A. F. H 293
EDITORIAL	294
TIDINGS EDOM TERRITORIAL DISTRICTS	296

Index to Advertisers

iii	Pelton Water Wheel Co	
vi		iν
		v
v		ii
vi	Welshach Company	
er		iv
v		
ν	Wood, R. D., & Co	ii
	vi i v vi er	ri Sprague Meter Co



Shipbuilding in various stages at the Schaw-Batcher Company's plant on the bay of San Francisco, California.

Volume X FEBRUARY, 1919 Number 9

Shipbuilding on San Francisco Bay; the Great Schaw-Batcher Plant at South San Francisco

By E. W. FLORENCE, Manager Redwood District.

Works, builders of steel cargo vessels on San Francisco Bay at South San Francisco, San Mateo County, operates one of several large plants erected on the Pacific Coast during the war period to build steel ships for the Emergency Fleet Corporation, the governmental agency created for the purpose of providing ships for the transportation of men and supplies across the Atlantic to aid our Allies to victory.

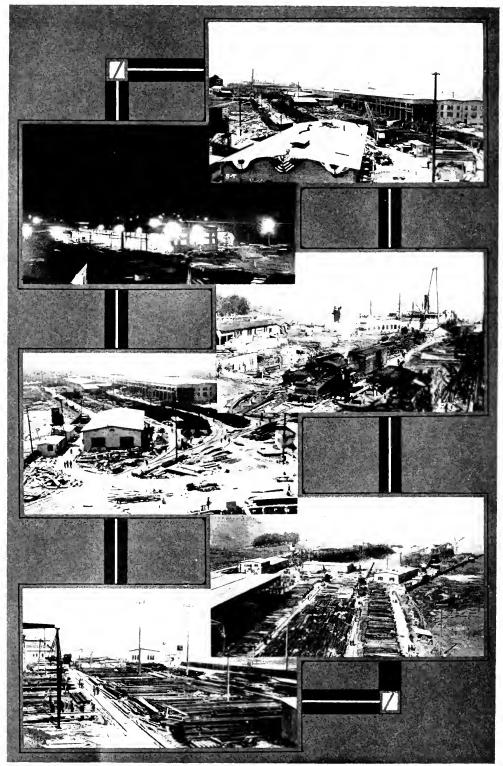
The story of this up-to-date enterprise is of unusual interest. When the Schaw-Batcher Company first entered the shipbuilding program, it was faced by serious handicaps as to location. Its property lies in a sheltered cove between Sierra and Oyster Points, far inside the threefathom line, and the establishment of shipbuilding works there meant digging a ship canal two miles long, 150 feet wide and with a depth at low tide of at least 15 feet. This feature of the location determined the method of constructing slipways for broadside launching into an enlarged basin at the inshore end of the canal.

All of the shops and plate-handling facilities of this plant were designed especially to produce a Schaw-Batcher modification of the 8800-ton d. w. Ferris design single-screw freighter. Subsequent contracts called for eight of these vessels, equipped with four Heine boilers and 2500-h. p. Curtis turbines, to be delivered in 1918, and fourteen of same type equipped with three Scotch boilers and 2800-h. p. reciprocating engines to

be delivered in 1919. These vessels are 427 feet in length by 54 feet beam by 29.9 feet moulded depth.

Suitable piling was driven on each side of launching basin and the whole of the area to be used as building ways was floored with heavy planking. The basin, 1000 feet long and 250 feet in width, provided ample room for the construction of four 8800-ton vessels, two on each side. Tracks for cranes were laid along inshore side of building slips, and four electric tower derricks installed with sufficient swing to reach the full width of hulls. Inshore from these crane tracks and extending the full length of the ways are fabricating parks served by locomotive cranes and railroad tracks from the plate shop and laying-out park. The plate shop is 720 feet long by 150 feet wide, covering an area of two and one-fourth acres. Six electric cranes serve the bending slabs and machines. One planer, ten punches, three shears, two bending rolls, hydraulic press, one riveter, one bulldozer, one rivet-making machine and numerous other tools make up the equipment. The plate shop gives one the impression of having ample room for the work in hand. The laying-out park is adjacent to the plate shop and lies between that building and the mould loft. The term loft is a misnomer here, as the structure used is a one-story separate building 255 feet long and 80 feet wide, very well lighted.

The side-launching methods used at the Schaw-Batcher works are worthy of

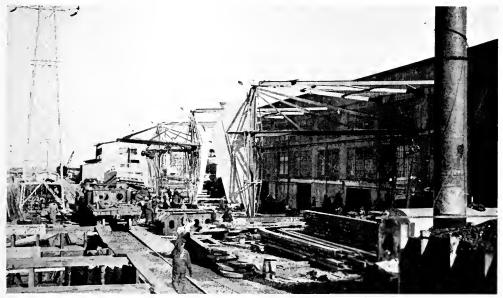


General views of the Schaw-Batcher shipbuilding plant at South San Francisco, on the bay shore.

special study. The keel is laid level and parallel to the edge of the launching basin. Scaffolding is used on both sides of hulls, that on the outboard side being erected by the aid of a floating barge derrick. The level keel and perpendicular frames give an advantage in lining up and fitting, and the average distance from fabricating park to location in hull is decidedly less than for end-on ships. When the hull is ready for launching

held in place only by the dog shores. At the signal, six men cut the lashings with sharp axes and drop on the ways, for the hull slides over them in its "shoot" to the water. The success of this form of launching lies in getting sufficient headway so that the speed carries the hull clear off the ways as the outboard bilge takes the water.

Hulls have been launched successfully with a vertical drop of over four feet



Scene showing how and where the steel parts are assembled and loaded for various hulls.

large timbers are laid on the planking of the building slips at an inclination of one and seven-sixteenths inches to the foot. These form the stationary launching ways. On these, after thorough greasing, cribs of timber are erected on the inboard side, running about two-thirds of the length of the hull. These inshore cribs are built up solidly against the hull. Outboard of the keel, the cribs are erected in groups with wedges, set so that when the wedges are driven the weight of the hull is brought down solidly on the inshore cribs and relieved from the keel blocks. Then three dog shores are set on each end of the old figure-four plan.

Everything is made taut and then keel blocks and shores are knocked away, and the hull rests on the launching cribs, from top of stationary ways to water level.

The "man behind the gun" in the Schaw-Batcher Company Ship Works is Mr. A. L. Becker, who has recently been appointed manager after a very arduous year as superintendent. Mr. Becker hails originally from Michigan and is a graduate of Ann Arbor with the degree of civil and mechanical engineer. He has had a wide range of experience as a shipbuilder and marine engineer, having held positions of responsibility with the Craig Shipbuilding Company both at Toledo, Ohio, and at Long Beach, California. The position of superintendent, left vacant by the promotion of Mr. A. L. Becker, was filled by the appointment of Mr. O. B. Kibele, formerly yard superintendent at

the Potrero works of the Union Plant of the Bethlehem Shipbuilding Corporation. Mr. Kibele's marine experience covers U. S. Navy work in the Philippine campaign, operation of the Union Oil Company's fleet, and supervision of the construction of a number of vessels for the same company.

Approximately 5000 men are employed at the Schaw-Batcher Works, and the weekly payroll approaches \$200,000. The men

employed are working practically three different eight-hour shifts per day. For the convenience of the workmen who do not bring their own lunches, the vard is equipped with several cafeterias, and each day during the noon hour concerts are given by the fifty-piece brass band composed wholly of employees of the company under the direction of Mr. H. D. Hill. The company has erected several sheds which are used by the workmen to park their automobiles during the day, the nominal charge of one dollar a month being made. Also among the many improvements recently made is an emergency hospital, one of the most modern and best equipped shipyard hospitals on the Pacific Coast.

"Pacific Service" plays a most important part in the operations of this plant, both gas and electricity being used in large quantities. The use of gas for rivet heating, for brazing in the copper shop and for heating the administration build-

ings was determined upon only after exhaustive tests had demonstrated its superiority over other fuels.

In order to insure an adequate supply of gas a 4" high pressure pipe line was extended from the 8" high pressure main located on the State Highway to the shipbuilding plant, a distance of 16,500 feet. This 8" main extends from the Potrero Gas Works of company in San Francisco to



Manager Becker and Superintendent Kibele overlocking a nearly completed vessel.

Redwood City, a distance of twenty-eight miles, and supplies gas to all the intervening territory. A 4" line extends from Redwood City to Palo Alto and Stanford University, and this line also supplied large quantities of gas to Camp Fremont during the period of its existence.

At the terminus of the 4" line extended to the shipbuilding plant the pressure is reduced from approximately 50 pounds to the square inch to 6" water pressure. Five No. 00 Equitable regulators are employed for this purpose. Each regulator delivers gas through two meters, each having a capacity of 3400 cubic feet per hour. The ten meters installed have their outlets neatly connected to a 10" welded header pipe. This header pipe is connected in turn to one 6" and one 8" pipe conveying the gas to two Selas systems, one having a capacity of 8800 cubic feet per hour and the other 25,000 cubic feet per hour.

In burning gas, as with other fuels, a



Crowd watching a launching at the Schaw-Batcher plant.



Manager A. L. Becker casting an eye over a newly completed ship.

certain proportion of air must be used in order to support combustion. This air may be supplied at the point of flame, or, in the case of gas fuel, can be mixed prior to combustion. To obtain the localized extreme temperature desired in many applications the latter course is desirable. The superefficiency, then, of a gas flame depends to a great extent upon this mixing process.

In large installations the saving in fuel that can be effected by totally eliminating the human element in obtaining this mixture and substituting mechanical means oftentimes justifies a large expenditure in securing apparatus designed for the accurate premixing operation. Such was the case at this plant.

Here the Selas apparatus is The machine consists of four essential parts: A pressurereducing valve which reduces to atmospheric pressure the gas, which is bound to be supplied with some variation in pressure from the gas company's mains; a mixing chamber in which the gas and air of atmospheric pressures are admitted in the proper proportion, usually one part of gas to two parts of air; a compressor by means of which the mixture is delivered under the desired pressure through the distributing pipes to the various burners; a pressure governor

which controls the delivery pressure, at the same time acting as a bypass for any quantity of air and gas that may be mixed by the machine over and above the amount desired at any period.

It can be seen that the possibilities of increasing efficiencies of operation by the use of such apparatus are numerous. This machine, automatically and thoroughly mixing the air and gas and delivering the mixture under constant pressure to the burners, insures the very highest even flame temperatures, and the result is not only a saving in the consumption of gas but the results secured in the

finished producers are such as can be obtained with no other fuel.

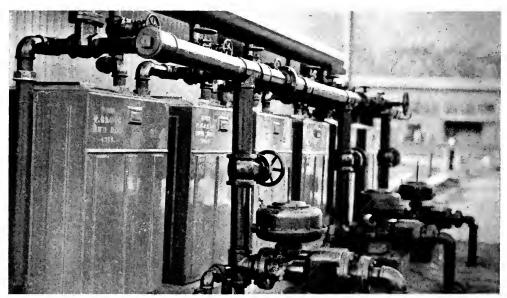
From the outlets of the Selas systems the gas is conveyed to the several slips where it is burned in suitable furnaces for rivet heating. About 650,000 rivets are used in each 8800-ton ship, and approximately 2,560,000 cubic feet of gas is required for heating these rivets. No fuel other than gas has proved wholly satisfactory for rivet heating, a



One of the Selas machines installed at the Schaw-Batcher plant,

uniform temperature being essential, and, because of its flexibility and easy control, gas meets every requirement. In the copper shop furnaces of special design are employed for brazing the copper plates and tubing. For this work gas has proved the only satisfactory fuel. For heating the administration buildings ventilated gas radiators are employed to advantage, their use permitting of an efficient and even distribution of heat. Where the floor space is at a premium the radiators are placed on brackets secured to the wall about six feet from the floor. In this plant gas fuel has be-

The electrical energy is delivered to transformer three stations on the premises of the shipbuilding plant from the South San Francisco substation of the Pacific Gas and Electric Company over a 4000-volt, three-phase, four-wire circuit carried on high poles to points adjacent to the transformer stations. Lead-covered underground cables are employed to conduct the current from the overhead line to the transformers within the stations where the high voltage is reduced to 440 volts for power purposes and 110 volts for lighting. Five electric welding machines are also supplied. At



Portion of the meter and regulator installation supplying gas to the Selas system at the Schaw-Batcher plant. One of the largest installations of the kind on record.

yond question contributed very largely to the high efficiency that has been attained.

Electricity furnishes the power for the air compressors which supply air for the operation of the pneumatic tools of various kinds and the operation of many different machines used to prepare the huge steel plates employed in ship construction. The ease with which these machines punch rivet holes in the plates and hammer them into various shapes reveals in a large measure the secret which makes it possible nowadays to turn out ships of large size in a comparatively short time.

this writing 3028 h. p. is installed in motors and 150 h. p. in lights at the ship-building plant.

The construction of the Schaw-Batcher shipbuilding plant was commenced in August, 1917, and the first ship, the *Isanti*, was launched on June 3, 1918.

Working conditions are ideal as compared with eastern shipbuilding yards, due to our mild winters and cool summers, and because of its advantageous location and modern equipment this new addition to the shipbuilding plants of the Pacific Coast has a most promising future.

The Gas Bill in Final Analysis

By CHARLES L. BARRETT

In the daily routine of a gas company's business there is one thing prevailing over most other of its operations which is recurrent at this time of year and seems to continue in almost arithmetical progression until the cold and dark weather of our rainy season merges into the more balmy and lighter days of spring; and that is, the complaint of Excessive Bill.

There are several things the worthy consumer does not consider in gas bill increases, especially if the gas has been used exclusively for lighting, and one is that bills vary materially between winter and summer. This would likewise apply to electric lighting. Theoretical tables figured carefully upon a basic day of from 6 A. M. to 10 P. M. show necessities for light to be as shown in the table below, and it is quite natural that charges should be in accordance therewith. June and July are practically equivalent in the matter of light requirement, and are the months of most daylight, there being but two hours per day of darkness between the hours above mentioned, i. e., from 8 to 10 P. M. The other months show increases over that, including the necessity for morning lighting up to 7 hours and 25 minutes per day in the month of December. The table illustrates all this, the percentage of increase as between the months, and the percentage that each of the other months exceeds the June-July month, all based upon the calendar time of sunrise and sunset, but not upon actual weather conditions.

NORMAL LIGHTING BILLS BASED UPON THE DARK HOURS BETWEEN 6 A. M. AND 10 P. M.

Average Number of dark hours per day in Month between 6 A. M. and 10 P. M.	Month.	Increases by Mouths.	Increases over June-July.	Amount of bill based on bill of \$1 for June-July.
Hours Mins. 7 0 5 20 4 9 3 7 2 25 2 0 2 41 3 36 5 8 6 22 7 25	Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.	31% over Feb	250% 166% 110% 56% 20% base 34% 80% 156% 218% 270%	\$3.50 2.66 2.10 1.56 1.20 {1.00 1.34 1.80 2.56 3.18 3.70

If argument by the company's adjusters along the lines of the above table will not suffice to convince a consumer as to the probable correctness of the bill, then there remain but two things the company can do to prove its charges. First, the testing of the meter, which has to be done at the company's shop, and which if not done in the presence of the consumer is not satisfactory to him, and second, the installing of a recording test meter. This latter is really the "motif," as is fashion-

ably said, of this article.

The recording meter has in conjunction with its dial mechanism an eight-day clock which revolves a drum upon which is mounted a chart blank, ruled sectionally into hour periods, over which passes an inked pen. The pen progresses spirally over the paper as the period of installation proceeds and is caused to register a small mark at right angles to the length of the chart every time such quantity of gas passes through the meter as is warranted by a single revolution of the spindle that actuates the hand of the test dial. This depends upon the size of the meter used and may be five, ten or twenty cubic feet. The recording meter is always set in series, or in tandem, popularly speaking, with the regular meter, and being under continual test for correctness, proves without question any faulty registration of the regular meter at the end of the test period, which is usually about five or six days.

In addition to this comparable registration of both meters for the total period, the recording meter shows by its chart markings the actual moment of the period when the gas, in small quantities of five, ten or twenty feet, according to the size of the meter, was used. The total number of markings multiplied by the cubic feet represented by each mark should equal the total quantity shown by the recording meter and always does so, barring pen accidents, which are rare. The resultant chart of this meter is almost invariably satisfying to the consumer in proving the correctness of bills, provided the consumer's own meter is not faulty in registration, and, of course, this feature is incidentally proven and cared for by adjustment. A reproduction of one of these charts is shown below, and with its showing of the total usage divided into fivefoot amounts and the time of day indicated when each five feet were used, it must be admitted that the gas company has the best of the argument and situation. Let's transcribe and subsequently analyze this sample chart.

The routine incident to the chart making was about as follows: Mr. Consumer, thinking his September bill excessive, called at the company's office and wished the charge investigated. Being of a suspicious turn of mind, he wanted some sort of a test of the meter in place rather than to have the meter taken away and tested at the company's shop. Conditions at the premises were found to be as follows: Gas used for cooking, water heated by automatic heater, occasional air heating in cold weather, electricity used for light in combination fixtures where gas also was occasionally The family consisted of husband and wife and a grown son and daughter. A man was hired once a week for the windows and heavy cleaning, a laundress coming in Mon-The report when the complaint was made was the usual one, that "we use the same amount of gas month in and month out, home conditions are always the same, gas is not used for lighting so that the hours of daylight would

not affect it," etc., etc.

Now note the chart. Primarily it shows that it was connected upon Friday at noon and disconnected the following Thursday at noon. Then it shows, at least during the week in question, just when the family rose and breakfasted, there being no gas used before 6:20 A. M. (see chart) and considerable used immediately after that time except upon Sunday, when gas commenced to be used at 8:30 A. M., indicating a later breakfasting hour upon that day. Then note the larger and earlier usage upon Sunday afternoon than was usual upon week days. This proved out upon submitting it to the complainant to have been caused by an earlier dinner hour with company, a large roast, entrees, and more hot water used than ordinarily. Again, the week-day dinner hour cookery started at about half-past five, the chart marking commencing at that time denoting the fact. Upon calling the consumer's attention to the unusual usage upon Wednesday afternoon he thought that our meter was certainly at fault, but upon conferring with his wife it developed that a number of lady friends had called and that they had had tea and toasted muffins at a little after 3 o'clock, just as indicated. The large usage upon Friday night between 11 and 12 o'clock, Sunday between 11 A. M. and 12 noon, and upon Tuesday night between 9 and 10. proved to be extra hot bath moments when the automatic heater worked industriously. continuous usage during Monday forenoon was due to the larger use of hot water and the use of gas for heating irons. The family washing called for this, as understood from the con-

	_	_			_		_			_	_	_		_	_	_			_	_		_					
		١	ما	'n	18	E.	_	_	j	R	, Z	h	2						0	_		_			_	_	
		A	۱D	D	R	ES	55	5 <u>'</u>		_		4	<u> </u>	5		2	<u>, , , , , , , , , , , , , , , , , , , </u>	Z	7			_	2	_		_	-
																	~	_	\\ *	1	12			70			•
			40	E.	2	ر ا	n	t	· T.	£	_ کر	—'	<i>(</i> (יכ	M hi	1E	×		V	ar 1	igi ET	50	۷.	<u>~</u>	_	Ö	c
	h	Z	ri		5	ar			iu	~	Z	160			ũe						hi			,	^ T	_	_
	Π	₹	_	ъ З	ł		P X	ξ		P M	Ž		P	ş		D X	Š		N Z	Ş			A		ğ	_	_
	П	1		F	٦					П	٦			٦			آ		Ē	آ	٦	٦	٦		1	_	_
				H			H	1		Н	ı			ı		E	Ì		E	i		١					
				F	۱	1				l	I			١			ı			ı					۱		
	+	1		Н	H		-	Н	Н	Н	1		H		=	H	+	_	1		+		+	_	H	_	_
ĺ				F			F			Ш						F			F			١					
	1						l	ŀ		Н	1		Н	١		II	1	i	l	١							
	+	+	-	H	Н		H	Н	Н	Н	Н	Ш	Н	Н	2	Н	-		H	Н			Ц	_	Н	_	_
				ŀ	l		٢			H	ı					F			Ļ						I		
l	١																		ľ	۱						ŀ	
	4		4	Ц	Ц	_	Ц	Ц		Ц	Ц		Ц	Ц	3	Ц	Ц	L	L	Ц	L					L	_
	١			ľ			l			U									Ę								
				ı			l			Ē		۱ د	H			ı			l								
				ı,			I	ŀ		Ē	l		l		4				ı								
										Ē	П								Ī	П					П	Г	
							l	l	-	Ē			l		L	ľ			ĺ								
				l	I				ŀ	l					5			l			-				I		
Ì		H		t	H	Г	l	۲		E	H	r	l	H	5	H	Ш	H	l	H	-	H	H	H	H	-	
			i	¢						F	l	ŀ							l								
			i	È	ŀ		Ę			ŀ			Ė			È			È		l				Ш		1
-	-	H	_	F	H	H	F	H	┝	H	L	┝		H	6	F	L	ŀ	E	ŀ	H	L	L	L	H	L	4
l			1	ŀ		4	ſ		ı	ı			۴	l	L	ſ	ŀ	L	ľ	١	L	ĺ			H		1
					ľ	AHILL .	ļ	١		١	ŀ	Ę	١	١	Ē	ŀ	١		l		F		l				
L		L	L	ļ	L	L	L	L	L	L	L		L	L	2	Ļ	L		ŀ		٤	L	L	L	Ŀ	L	
		١		È		ŧ	ŀ	İ		l		E	l		۴	٢			È		Ē						ı
l		l		١			l	l		l	l	ı	١		l	۱	ľ	l	l	ļ			l				I
L		ŀ				Ĺ	1	l		ı	l	l	١	l	0	l		l	١	١	l						ı
Γ				I			I	Γ		Ι		F	Ī	Ι	E	Ī		È	Ī	Ī	F	Ī	Ī		T	Γ	1
		١		l	l		l		F	l	l	ı	l		l	l	l	ı	l	l	r						
		١		١			l	l	Ē	l	l	l	l	l	Ļ	l		l	l		l						
۲		t		t	t	T	t	t	F	t	t	ţ	t	t	ľ	Ł	t	r	t	t	H	t	t		t	-	
				l	l		١			١		E	l		1	E			۱		ĺ				l		
							I		ı	l	1	É	١	١		۴	1		ļ		ŀ		1				
H	_	+	-	ł	H	\vdash	ł	ł	\vdash	ł	ł	F	ł	ł	P	+	┞	H	ł	ł	\vdash	-	H	-	+	H	
		l		l			١	l	1	l	١	E	l	l		١		١	١				1				
				١			١	١	1	ſ	1	ſ	١	١						I							
	_	1	_	1	1	L	ļ	ļ	F	1	ļ	L	ļ	1	F	1	1	1	1	1	L	1	L	L	1	Ц	
		١		Į		1	1	l	E	۱		F	L	1				Ē			F						
				-		E	ì	1	Ē		l	F			E			F	Ì	1	E		١				
_				F	1	Ĺ	l		L	1		L			2				1	1		1	l	L	1		
			_																								

Chart from recording gas meter.

sumer's original statement, but he was surprised to hear that the quantity was so great. Note that the gas used Monday forenoon, 195 cubic feet, was 90 feet greater than on Sunday, the next greater showing, Sunday being naturally supposed to be the day of least consumption, the chart, however, showing that it was not. The record marks showing five feet

shows the variance between the amounts of daily usage, the forenoon and afternoon usage. Finally, the similar showing of the regular meter and the recording meter, both of which set in series have separately registered the same amount of gas, upsets the consumer's impression that his gas usage should be practically the same "month in and month out," there

	Fria	ay	Satu	rday	Sun	day	Mone	day	Tues	day	Wedn	esiday	Thursday		
TIME	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
12 to 1															
1 to 2												ļ			
2 to 3									<u> </u>		5		ļ		
3 to 4							5					<u> </u>	ļ		
4 to 5			5		5				5		ļ	<u> </u>	5		
5 to 6													<u></u>		
6 to 7			25				25		30		30	<u> </u>	25		
7 to 8			15				20		10		20	<u> </u>	15		
8 to 9					35		10		15		10		10		
9 to 10					10		65					<u> </u>			
10 to 11							40								
11 to 12			30		55		30		30		30		35		
12 to 1		25		30				20		30		25			
1 to 2		15		15				10		15		20			
2 to 3		15		10						10		10			
3 to 4						55						15			
4 to 5						40									
5 to 6		30		25		20		30		35		35			
6 to 7		15		10				15		15		20			
7 to 8		10		5						10		15			
8 to 9															
9 to 10										55					
10 to 11						5									
11 to 12		50		5				5				5			
TOTAL USAGE		160	75	100	105	120	195	80	90	170	95	145	90		
AJLY TO	ATIVE STALS		17	75-	22	25	2	75	26	50	240				

used in long periods of time in the late evening and early morning hours were caused by the accumulations of about one cubic foot per hour for gas used by the automatic water heater torch light.

Of course, this evidence is as direct as possible, being shown by an inanimate measurer and, therefore, convincing. It

being a variance possibility in this single week as between 175 cubic feet per day, or 5250 cubic feet per month, and 275 cubic feet per day, or 8250 cubic feet per month.

The result of the investigation, together with a copy of the chart transcription, is always mailed to the complainant.



PACIFIC SERVICE"EMPLOYEES ASSOCIATION



The first gathering held under the new administration took place on the evening of Tuesday, February 11th, at Elks Hall, San Francisco.

инивания принципального принципально

The attendance was most gratifying to Chairman George and his officers. theater was literally packed to the doors, and so well had the notice concerning punctuality at meetings been received that before the advertised time for the rising of the curtain it was a case of "standing room only." The actual attendance was close on six hundred, breaking all records for regular monthly meetings held under the auspices of the association.

Chairman George's idea of gathering the various branches of the entertainment feature under one working head turned out excellently. The whole program went through with a snap and without a hitch. It opened, according to established custom, with "The Star-Spangled Banner" and community singing under the direction of Mr. Lowell Redfield. Then followed selections by the Bohemian "Jazz" Quartet, four excelent voices that had been heard before at gatherings of the kind. Chairman George presented his report to the Association, outlining the work of the various committees, a program of activity calculated to bring speedy results in an increased membership. Mr. George was followed by Mr. R. E. Crossman, chairman of the committee on membership, who called attention to the membership drive that had been instituted in the San Francisco and Alameda County Districts and assured his hearers that there would be no let-up on this drive until the gaps made during the war period had been more than made up and an active membership of at least one thousand enrolled on the Association's books.

A special feature of entertainment was the appearance of Mr. Bayard Robley of the University of California Extension Division, in some well rendered recitations. Mr. Robley was introduced to the audience by Mr. Redfield, a personal Then followed more selections friend. by the Bohemian Quartet, after which the long-promised play, the first of the announced series of five to be produced during the present season, was presented.

It proved to be a one-act comedy, entitled "The Ninety Thousand Girl," a comedy of English society life from the pen of Sydney Grundy, a well-known London playwright, and which once held the boards in a fashionable London theatre. The play revolves around the plan of an impecunious baronet, Sir Barnes Barnstaple, to marry his son to the daughter of a wealthy oil and tallow merchant with whom he, the baronet, had been on terms of business intimacy for some years to the considerable advantage of the Barnstaple fortunes. The dialogue was bright and the situations humorous, and, according to the established order of plays in general, it terminated happily with the coming together of the two young people and general satisfaction all around.

Mr. Frank Mathieu, well known to San Francisco society as the producer of amateur spectacles and who for some ten years past has staged the wonderful openair plays in Bohemian Grove, had been specially retained to produce the several plays to be given during the season, and upon this, the initial offering, he had devoted his best energies in the direction of making the most out of the available From the way in which the material. audience took up the different points and voiced its approval of the play as a whole it may be said that Mr. Mathieu's efforts were rewarded with success. The cast was as follows:

Sir Barnes Barnstaple, Bart..... Harold Barnstaple, Dart. F. S. MyTte Harold Barnstaple Philip Carson Joshua Turnbull, Esq. R. E. Fisher Mrs. Turnbull Miss Eme Brandt Dolly Turnbull Miss Estella Braesch Norah Miss Zita O'Connor

The success of this initial experiment in the play-producing line has encouraged Chairman Fisher and his associates on the entertainment committee to still further strides, and they are already making up the cast and arranging rehearsals on the second play of the series, which, according to schedule, will be given at the Oakland gathering on April $\tilde{2}2d$.

Undoubtedly the energy shown by the membership and reception committees, headed, respectively, by Messrs. R. E. Crossman and E. W. Florence, was largely responsible for the excellent attendance which greeted the opening gathering of the season. Since the last issue of Pacific Service Magazine important meetings of the membership committee have been held in San Francisco and Oakland. At each of these, in addition to Messrs. George, Robinson and Crossman, there were present some fifteen members representing the particular district in which the meeting was Everyone present was assigned a part in the work of assisting in the membership drive, and so enthusiastically was this work set about that it is safe to say that the predictions made by Mr. Crossman at the San Francisco gathering on February 11th will be more than realized in the very near future.

The drive progressed unceasingly during the entire week of February 10th to 16th, inclusive, and the placards "Join Now" were conspicuous everywhere. Evidently the war work of the past two years has had an inspiring influence.

Another important department of the present administration is the committee on women's affairs, headed by Mr. L. M. Evans. This committee is dealing with the project to encourage athletic pursuits among our women members to the same extent that they have always been encouraged among the men. At a recent meeting of the committee it was announced that the necessary fifty women

members had signed up for the swimming class to be inaugurated at Y. W. C. A. headquarters in San Francisco, and that instructions would begin without delay.

It was also decided to form a dancing class for both men and women members to encourage this healthful form of amusement at all gatherings of the Association. With the help of the reception committee it is hoped that there will be less constraint about this dancing feature in the future, so that the Pacific Service Orchestra which provides the very best of jazz music for the terpsichorean section of each evening's entertainment will not find its labors unappreciated.

Another matter worthy of mention is the presence of outside district managers at our Association gatherings, always a healthy sign for the welfare of the Association generally. At the meeting on February 11th, Mr. E. W. Florence was there from the Redwood District, Mr. H. G. Ridgway from the Marin District, Mr. Don C. Ray from the Contra Costa District and Mr. H. M. Cooper from the Placer District. Two of these district managers, at least, had some distance to come and their presence was most welcome. Alameda County was represented by a goodly contingent headed by Mr. G. B. Furniss. Mr. F. A. Leach, Jr., the genial manager of the district, would undoubtedly have been present but that an attack of the prevailing epidemic of influenza had laid him low for weeks and he had not sufficiently recuperated to make the journey across the bay.

Activities of the "Pacific Service" Rifle Club

By S. E. CARPENTER, Secretary of the Club.

The outlook at the beginning of 1918 was not very bright for the civilian rifle clubs throughout the United States. The active and enthusiastic members to a man had already joined the colors. meant that the hitherto inactive members had to be sufficiently stirred up to make the trip to the range and that new members had to be enrolled. This was a hard task for some clubs, because the expense to individuals was much greater than previously. The Government's free issue of Krag ammunition had been closed for months, necessitating the use of reloads at individual expense. Springfield ammunition could not be purchased at any price, which again meant reloads. Our club was a little more fortunate than some, however, as we had plenty of Krag ammunition on hand to carry us through the greater portion of the year, and the only expense to individuals in any case was the yearly dues of \$3 to the "Pacific Service" Employees' Association.

The first shoot was held in January and one each month thereafter, except in February, when rain prevented. Several new members were enrolled during the year, and although there was never a large attendance we had some very enjoyable shoots. Several of our old timers and enthusiastic members were able to attend but once or twice during the whole year, due to overtime work required to make up for the shortage of help. During the year the following qualifications

were made with Krag rifles on the Leona Heights Range: Four expert riflemen, three sharpshooters and seven marksmen.

In February the National Rifle Association's indoor matches with the .22 rifle started with about eighty-five civilian teams entered from all parts of the United We entered a team but were greatly handicapped through lack of equipment and of a place to shoot. We struggled along as best we could and landed about sixtieth place with a total of 9209 points out of a possible 10,000. Many of the teams entered were old timers, and each member was equipped with his own rifle, generally with telescopic sights, and had an ideal place to shoot. With beginners in our club and only two rifles for a ten-man team good scores were almost impossible, as no two men shoot with sights set the same. However, four members attained scores entitling them to the medals awarded by the N. R. A. to members firing in all ten matches and with an average score of over 90 per cent.

In June a tryout of all rifle clubs around the Bay was held to enable the S. F. B. A. R. C. L. to pick a team of twenty-four men to represent it. One of our members landed in eleventh place and two more just below the twenty-fourth position. From these twenty-four men teams of ten and twelve men were selected and held matches with various military organizations. They won some matches, lost several, but had a most enjoyable time.

In September the national matches with the new M-1917 service rifle were held at Camp Perry, Ohio. A civilian team of sixteen men representing the State of California was sent and captured second place of all civilian teams. Several members of this team were from various clubs of the Bay region and succeeded in bringing back some of the much-coveted medals.

The annual report for 1918 covering the activities of our rifle club is now in the hands of the National Rifle Association, and we are focusing our entire attention on the plans for the coming year. The following officers have been elected to serve for 1919:

C. H. Lusk, president.

V. R. Hughes, vice-president.

W. Dreyer, secretary and treasurer.

W. O. Stephens, executive officer.

But it is up to every member individually to make the club a success during the coming year. One of our members has set a mark for the rest of us, as

his endeavors alone have added a half score or so of new members to our roll.

The Government has not as yet been able to get full plans made for 1919, but the indications are that conditions will be much improved, a larger ammunition allowance may be authorized and the purchase of various models of rifles at reasonable prices be provided for. It is an assured fact that the Government fully realizes the benefits derived from the civilian rifle clubs and is going to do everything in its power to further the possibilities of such clubs.

This year we were unable to hold our regular monthly shoot in January on account of rain, but shall endeavor to hold at least one every month for the rest of the season. It is very likely that we will have some of the boys in the service back with us and it is hoped that their enthusiasm for the shooting game will reach such of our members as have been inclined to be a little slack and thus bring them out to the range once more. The larger our list of active members the greater will be the pleasure and benefit derived by all.

A new arrangement has been made with the range tender whereby he has everything in readiness for us to start firing, which will greatly reduce the length of time spent on the range. A half day will be sufficient for the completion of all firing if the members will make a little effort to be there promptly on the time stated in the monthly notices for starting firing.

The indoor competition matches with the .22 caliber rifle, held annually under the auspices of the N. R. A., will start the first week in March and continue for ten weeks. Ten-man teams from all over the United States enter these matches and anyone in the club is eligible to try out for the team. Anyone interested may obtain full particulars from W. Dreyer, the rifle club secretary.

Remember that the Employees' Association bears all the expense of this branch of athletic activity, and that it is one of the most popular sports amongst red-blooded Americans who have been accustomed to the out-of-doors. Our membership at present is greatly decreased, as the names of forty-two appear on the honor roll. This means that to make this season of 1919 a big booming success every member must endeavor to bring one or more of his friends with him to the range. They will then see what it means and immediately be desirous of joining our ranks.

News From Our Boys Now in the Service of the United States

[Gathered by the Committee on Relations with Our Employees in the Army and Navy]

J. E. Traxler of Alameda County District, by reason of his electrical experience, has been detailed by the Y. M. C. A. to serve with the Community Motion Picture Bureau in France.

Regimental Supply Sergeant H. J. Hansen was located at Brest on November 27th. He had just been assisting one of

his officers to work out the personnel and equipment of a regiment of engineers, as follows:

Six officers, 250 enlisted men, 3 automobiles, 57 trucks, 92 riding horses, 12 tool wagon trailmobiles, 8 baggage wagons, 2 medical carts, trailmobile type; 20 motorcycles, 26 bicycles, 56 pack mules, 8 ration wagons, 8 water carts.

Latest news from the men in the service who were formerly employed in Drum District is contained in the following:

Word has been received from Lieutenant E. N. Britton, who is with the famous Ninety-first Division, that he is now with the Army of Occupation in Germany,

but expects to be on his homeward journey before long. Lieutenant Britton was one of the first to leave from this district, and has been through the thick of it "over there."

Letters have also been received from Lieutenant M. P. Lohse. He is with the Motor Transport Corps in France, and did his part toward winning the war by getting supplies and ammunition up to the front. Now that the war is over he writes that he is ready and anxious to return to sunny California.

Private Samuel T. Johnson, who was also with the Ninety-first Division, suffered a severe wound while fighting in France in the battle of the Argonne. He returned about a month ago, and is now at the Letterman Hospital in San Francisco. Before joining the service Mr. Johnson was employed as ditch tender

at Bear Valley in the Drum District.
Charles A. Meservey, who did not get across, but got a lot of good training in this country, was honorably discharged from the Service about two months ago,

from the Service about two months ago, and has been returned to his former position as power house operator at the Drum power house. We welcome him back.

Corporal George W. Hager, with the

aviation branch of the service, is at Fort Sill, Okla., and does not know just when he will receive his discharge. Before entering the service Mr. Hager was employed as power house operator at the

Drum power house.

John L. Michael, who enlisted in the navy during July, 1918, has received his honorable discharge, and has been returned to a position as power house operator at the Wise Power Plant, Placer District. Before entering the navy, Mr. Michael was employed as operator at Drum power house. He had worked in this district for several years, working with a survey party for the company at the time the Drum power house was constructed in

house was constructed in 1912, and while he has not been returned to our district we welcome his return to "Pacific Service."



Julian McFarland, Base Hospital No. 30, A. E. F. (Formerly of San Jose District.)

The following letter has been received by our jovial load dispatcher, Fred George, who is hereby named the King of all Station Operators, from Lieutenant Hector Keesling, now with the Second Aviation Instruction Center, A. E. F.:

Dear King George:

There is no argument about the salutation. I know. Haven't I been foreman of a couple of your power houses? All the foremen of the Gas Company's plants know that the load dispatcher is king. There were times, however, when I would have liked to have gone down and raised a rough house in the dispatcher's office, one particular time being when I had to crawl through the wooden stove at Electra

and climb up out of the standpipe and down the outside and beat it over to the telephone to report to Oakland that we were getting the job finished as soon as we could. We were working, too, but Oakland needed some load, or, more likely, it was a boost in voltage that was demanded, hence the telephone call to Electra to get busy. Just as if we had gone to sleep on the job.

Old Electra sure was the fall guy when it came to boosting voltage. The heads of all the first operators took a permanent tilt to the right from reading the voltmeters with pointers poked way over

on that side of the scale.

I might as well get it over with and state that I have not been to the front yet. Furthermore, it looks as if I will not get there at all, unless the war lasts longer than present conditions indicate. I came over all primed to get a couple of weeks of intensive training in signal corps work and then take to the trenches, and, as the colonel who received my application put it, to step in, in case the enoperating personnel tire should be wiped out by a shell, and maintain com-Unexpected munication. things happen in the army. Right now I am mixed up in the radio end of the dealing especially game, wireless telegraphy with and telephony as applied to

airplanes. I was mixed up in what might he called a successful crash a couple of days ago. Here is how it happened: I went up with a test pilot to test out some wireless apparatus, the pilot to test the ship mechanically, it being a new one. We lost a wheel just after taking off, but did not know it at the time. my tests in the antenna, giving the pilot the high sign that I had finished. Then he began his test. Well, he nosed the ship down until I could look over the top wing and see the ground nearly directly beneath, and he pulled a few tight spirals, and the wing slipped on one side and rolled over and wing slipped on the other and he zoomed and dove several times just like riding a choppy sea in a rowboat, and put the bus through a good test generally. This type of plane is not built particularly strong. They

are not used for stunts. The lieutenant satisfied himself that things were quite as they should be and slipped down toward the landing field. As we leveled off to come into the field we saw about everybody on the field running back and forth waving their arms over their heads and chasing back and forth across our line of flight, just ahead of us, like wild Indians. Then we saw a mechanic hold a wheel up over his head. This told everything. The pilot pointed the nose of the plane up and took on some altitude, then shut off his engine and asked me if I had my belt on and to get ready for a good bump. Then he smiled and turned

he smiled and turned around again and circled the field. I thought he was looking for a good soft haystack to land in. I also had visions of hitting the ground, nosing in and the ship flopping over on its back, so I carefully laid the voltmeter I was carrying on the floor of the cockpit, turned the machine gun mounting on the tourelle around so all would be clear in front, and had a look at my belt. Rather a novel sensation to know that something was going to happen but not to know to what extent the happening would be. I had a lot of confidence in the lieutenant because I had flown with him before, and knew that if anyone could get out of the scrape he could. He did. He came

in over the edge of the field as low as the trees and telephone and power lines would permit, and then pancaked the bus until the one wheel hit, then kicked his rudder around. About all that happened was that the ship whirled around at right angles to the original line of flight, the landing gear was torn off and we bumped along a few feet with the fuselage on the ground. About the first thing the pilot did was to turn around and ask me if I was hurt. He is a thoroughbred. Then as we climbed out of the wreck here comes the ambulance and the doc piling off the front seat. We congratulated the doc on his speed and told him we The doc told me couldn't use him. at mess that night that he cranked up the machine as soon as the telephone message came in that the ship had lost a wheel. We had some audience, some ex-



Lieut. Hector Keesling, Second Aviation Instruction Center, U. S. P. O. No. 717, A. E. F. (Formerly of the O. & M. Department.)

citement, and the pilot made some landing. Just to show our speed the lieutenant took up another boat in a few minutes and I went with him. It's a great life. If we had made the usual landing, not knowing the wheel was off, perhaps we would both be pushing up daisies by this time.

The following extract from a letter written by Private J. D. Butler, Jr., formerly of the assistant treasurer's office, has just been received. Tom Hornberger, formerly employed in the cashier's office in San Francisco, is also to be remembered in this same extract:

And so here we are, belonging to the

Army of Occupation. We're getting along nicely with our "poly-vous" and the use of francs, when of a sudden we must attempt to "sprachen dutch" if we wouldst hold conversation with the natives and use marks in dealing with them. Tom (Hornberger) has a start on me. He has the name; otherwise we commence our dutch alike.

It's great to have made this visit to Germany, but it would more than please us to be home, and oh, those good old clothes we were once wont to wear!

We are in the Fourth Division and can boast of having been in all the final pushes. We saw action at Chateau Thierry, St. Mihiel and Argonne Forest.



Wm. Z. Butterworth, "D" Co., U. S. Naval Training Station, Goat Island. (Formerly of Fresno District.)

Crawford Hill, under date of January 14th, writes from Ceton, France, that the "Y" is still doing good work and is helping them admirably to while away the time until they are ordered to sail for the good old U. S. A. Speaking of aerial operations, he states that one American aerial squadron that passed over them consisted of nearly one hundred machines, and "believe me, the sun was well shadowed and that was the only time it had appeared."

Crawford C. Hill was formerly of the Commercial Department, San Francisco. A little son is waiting for him, who arrived while he has been in France.

Earl D. Jacobsen, formerly of the Bookkeeping Department, San Francisco, has written several letters to Mr. Britton since the signing of the armistice. He is also among that vast majority who state that after they pass through the gates of New York Liberty will have to turn around if she wants to see them again.

Under date of December 11th he writes that he has not seen the sun for so long he is sure that there is only one place where the sun shines and that one place is California. "Dealing with the people so far has been a very easy matter, for there seems to be nothing that they will not do to assist us. They come out on the streets and take us into their home for dinner if we will go. They seem to be very much pleased that the Americans have come, but still wonder why the

Americans entered the war. They are all glad that the Kaiser and his clique are

out of power."

Under date of January 1st he states that his company is doing guard duty on the Rhine bridges and mounted patrol along the river. "It is a great record for each one of us. There are three bridges and two ferries. The river at the present time is very high and is flowing at the rate of about fifteen miles an hour, and is about 200 yards wide. Its importance is easily seen to all of us and is Germany's pride."

J. A. Royster, formerly of Contra Costa District, writes to Mr. Don Ray under date of November 27th that he is in the Army of Occupa-

tion and consequently was on his way into Germany. His first engagement was the Battle of the Marne, or, as he calls it, the retaking of the Chateau Thierry district. Then came the closing of the St. Mihiel salient on the Toul front, which he considers was a walkaway. Then came the hard time of clearing the Argonne Forest on the Verdun front, and finally two days after he was in the Battle of the Meuse, which was his final effort. But in spite of all he says he is glad to be there and none the worse for his experience, but now that it is over he wants to be sent home at the first opportunity.

The following letter under date of January 18th has just been received from First Lieutenant Malcolm L. Hunt, formerly of the Electric District Depart-

ment, Oakland. It sounds almost like a discussion of a meeting in the San Franoffice rather than with

Expeditionary Forces in France:

Your letter of December 11th arrived on Friday, January 17th. I was certainly glad to hear from you. Thursday night I had been talking to Lieutenant Emmet Britton, who is here in this town with his company. I mentioned the fact that I had not heard from you for quite a while and wondered how you were all getting along.

Lieutenant Colonel Canfield, who until just recently was in command of the 316th Engineers, has been sent to another regi-

ment because he was the senior lieutenant colonel in the regiment, and only one being allowed by army regulations he was elected. lost a very good friend and an excellent commanding officer in the process. He was exceedingly well liked by all of the men and officers of this regiment and we all feel it a personal loss.

I am now in command of the 316th Engineer Train. and distinct separate organization under the division engineer. In the process I managed to obtain a first lieutenancy, which I assure you did not make me feel at all sad. command of the train is like having a little kingdom all your own and I assure you I enjoy the work.

The engineer train took part in three major operations, St. Mihiel, Meuse-Argonne and Lys-Scheldt, losing only five men wounded and over one hundred horses killed. The men have since been returned from the hospital and I expect that we will return to the U.S.A. at full strength with every man who came to this side with us in the ranks.

You probably wish to know how I personally fared in the matter. The only time I had a shot at Fritz was during an air raid in the Meuse-Argonne scrap. I lay on my back on the ground with an automatic rifle and poured lead into him as he went over as fast as the rifle could He was forced to land by some obscure trouble with the engine about three hundred yards from where we were at the time and was captured and is now probably doing duty under some French private in one of the ruined villages of France.

division is being rapidly reequipped with clothing and we expect to be on the water early in February.

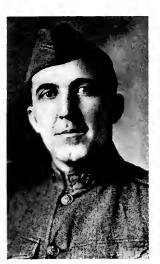
Private P. H. Manchester, formerly of Contra Costa District and now with Company "A," First Battalion, 37th Engineers, writes from Cochem, Germany, under date of December 26th.

He landed in Franch May 18th, having been carried across the pond on the good American ship George Washington, which our President has so highly honored. Most of the time he was stationed on the

Metz front and after the signing of the armistice was included in the Army of Occupation, he and another member of his company having been first attached to the staff headquarters of the Fourth Division, but now with the army headquarters of the battalion at Cochem.

Germany is proving very interesting to him, the people themselves being, of course, the principal object of interest. He observes that they seem to be almost starved and that possibly this is the reason that they showed the white flag. He is camped on the left bank of the river Moselle. town is spread out along the banks of the river at the base of high cliffs. On the peak of one extremely

high cliff is located a beautiful castle, and at the time this letter was written this castle was occupied by General Pershing as his headquarters. Manchester ran an electric generator Christmas evening which flooded the castle with its first electric lights. On the walls of the side away from the river is a large hand painting that can be seen from the town a mile or two away and at the base of the cliff.



Ray E. Curtis, 335th Aero Squadron, A. E. F. (Formerly of Chico District.)

Ray E. Curtis returned to the Chico District on January 1st, having been discharged from the service of the Govern-He left Chico on December 14th ment. and enlisted in the air service. Had his training in Waco, Texas, and later served six months in England with the 335th Aero Squadron.

How "Pacific Service" Provides for the Comfort of Women Employees

Arrangements for the comfort of women employees of "Pacific Service" have taken concrete shape in the establishment of lunch and rest rooms at headquarters in San Francisco and Oakland.

In San Francisco the women's lunch room is situated on the roof level above the eighth floor of the new building. Construction was started upon a General Manager's Order, dated November 20, 1917, allowing an expenditure of \$4000 for the work. It was completed April 1, 1918, and, needless to say, was made use of without any delay. It is a fine airy room, L-shaped, giving the appearance of two rooms knocked into one. One leg of the "L" measures 16x18 feet and the other 9x12 feet. There are thirteen serviceable tables, at each of which four can sit comfortably. Leading from the lunch room is a buffet kitchen where tea, coffee, soup and sugar are served free of charge. The women provide their own milk and any other edibles they may choose to bring with them. There is a large hot water heating pan in the kitchen at which beans, tomatoes and other canned foods can be heated. No cooking, however, is permitted. The company provides cups, saucers, dishes, silverware, everything, in fact, that is necessary for the comfort of all who care to take advantage of this room.

Miss Nellie Fellows is in charge of the lunch room and kitchen, which are operated under the supervision of the Property Agent's Department, through which all purchases of supplies for its proper maintenance are handled. It is the ultimate intention of the management to enlarge the women's quarters by providing a rest room adjoining the ones described. In the meantime a temporary rest room has been provided elsewhere in the build-



Lunch room for women employees on the eighth floor of "Pacific Service" Building, 445 Sutter Street, San Francisco.



Buffet kitchen attached to the lunch room.

ing, the main purpose of this being to take care of any woman employee who might be indisposed. This rest room was fitted up entirely out of funds belonging to the "Pacific Service" Employees' Association, and from the accompanying illustration it will be seen that this has been furnished in the best of taste and is a decided asset in the scheme of things.

The "Pacific Service" Employees' Association is also wholly responsible for the arrangement and furnishings of the women's lunch and rest rooms in the Alameda County District, where a house warming was held on Saturday afternoon, February 8th, at district headquarters, Thirteenth and Clay Streets, to celebrate

the final completion of this work.

It had been announced some months ago that the quarters were to be fitted up, and a surprise was sprung in the form of an official opening, when the suite of commodious rooms was turned over to the women employees for their exclusive use.

Two former offices and an anteroom were utilized. The anteroom was rearranged into a kitchenette and equipped with a gas water heater and tank for hot water service, two sinks, a coffee urn, hot plates, a steamer and two electric toasters. The adjoining room is used as a lunch

room with eight round oak-top wicker tables and Vienna chairs to accommodate thirty-two at a sitting. Connecting with the lunch room is a cheerful rest room, furnished throughout with Iccotan wicker furniture of the latest design. A couch, library table, rockers, settee, glass-top dressing table with a large French mirror, writing table and telephone are part of the conveniences to furnish comfort and ease. Framed views of company properties adorn the walls, and "Radiantfires" are installed in both rooms.

On the occasion of the formal opening Mr. W. W. Shuhaw contributed a beautiful basket of almond blossoms and another of

pussy willows. Mr. W. C. Sage of the General Electric Company presented an elegantly framed copy of the 1919 Edison calendar, and Kohler & Chase very kindly loaned a Victrola and records for the afternoon's entertainment.

An informal reception was held from 2 to 4, during which Mr. F. R. George, chairman of the "Pacific Service" Employees' Association, with a few well chosen remarks turned the rooms over to the local committee on women's affairs, namely, Misses P. Sturm, M. Adamson, Gladys Cummings, L. D. Wood and Mrs. M. Parsons. Announcement of the opening had been sent to all departments in San Francisco and Oakland, and during



Rest room for women employees at San Francisco headquarters.

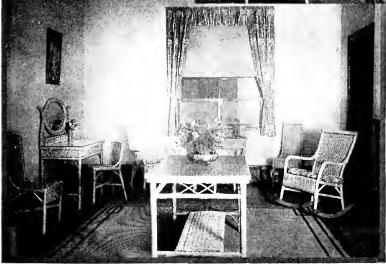


The "Pacific Service" Employees' Association has done a great deal to encourage a personal interest on the part of the women employees of "Pacific Service." Their membership is invited. and the Association meetings being of a more or less social char-

the afternoon refreshments were served by Mrs. T. D. Ottman, Mrs. E. Morris and Mrs. Myra Carey to more than one hundred and fifty visitors.

Mrs. Mary L. Harris has been engaged as matron and will care for the wants of the women employees. Tea, coffee, sugar and bouillon will be served daily without cost, as in the operation of the lunch room in San Francisco.





Women's quarters in the company's building at Oakland. The picture at the top is of the kitchenette, that in the center shows the lunch room, while the lower picture is of the rest room.

acter, there is an inducement to the women emplovees attend, particularly as on all occasions the proceedings close with a dance. Elsewhere in this issue will be found a report on the plans of the Association for encouraging active interest on the part of its women members.

"Pacific Service" Roll of Honor



Employees Who Have Entered the Service of the United States

REVISED LIST AS OF JANUARY 15th, 1919 Total Number -

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Aklen, Randall Francis
Baugh, Sergt. Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Sergt. Jesse Wilhert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
2Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
1Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.
*Died of pale

Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornherger, Cecil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindblad, Lieut. Wm. N.
Lindstrom, W. J.
McDermott, Louis Wm.
McDonald, Hayward C.
Mel, Capt. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
Murgatroyd, Robert
Murphy, Lieut. Elmo Neil
Nordling, Wm. Hammond, Everett E.

Osborn, Lieut. Norris W. Parker Charles G. Regan, Arthur Rossiter, Sidney Benjamin Rubenstein, Frank Sam Schuster, Lieut. John C. Shaw, S. B. Smith, Cyrus Newell Spinetti, John V. Stevenson, Lieut. Richard H. Sultan, Lieut. Walter D. Terhell, Sergt. Jacques Thomas, Lieut. G. M. Trowbridge, Capt. Alfred L. Trudrung, Harry Watson, John Wilkins, R. *Wilhelm, Clarence Williams, Lieut. Leroy C. Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn., October 14th, 1918. ‡Died of pneumonia in San Francisco, December 27th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Corpl. Harold M. Barr, John Milton Anderson, Corpl. Harold M. Barr, John Milton Barrett. George Bates, Byron M. Belford, William Bennetts, Herman V. Bertolacci, Ensign R. R. Braemer, Lee Bruno, Joseph Call, Bert Chandler, Sergt. Arthur E. Clarkson, Fuller Clayton, Oscar Fitzgerald Cooper, Walter Haines Cormack, Douglas Leslie Cowell, Charles Merritt Currier, J. Deuschle, Fred W Duceo, Daniel Dupuoy, Max Erickson, William Fairchilds, F. C. Ferguson, Allen E. Forbes, Robert E. Forbes, Stewart Frederickson, Stewart Gay, Earl D.

LAMEDA COUNTY DISTRIHansen, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hindman, J. E.
Hoffman, E. J.
Hughes, William C.
Hunt, Lieut. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones, Sergt. Ivor
Keesling, Lieut. Homer Grant
Kendrick, Eldon W.
Klinefelter. Sam
Knopla, Charles
Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt. George L.
Maslin, Capt. Francis I.
Massoni, Dante
McKenzie, Malcolm M.
Milla, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, Goorge A.
Nelson, Rorcal
CHICO DISTRICT

Oswald, James
Parsons, James
Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn. Wilfred M.
Sandoval, Ensign Horace Ear
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Frederick J.
Sprott, Bryan Oswald, James Southerland, Frederick J. Sprott, Bryan Stephens, Alden Raymond Thompson, Clark C. Veirs, Harry D., Jr. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurat, Leslie Youngstrom, A. B.

Curtis Ray E.

CHICO DISTRICT

Truitt, James O.

Andrews, Crist C. Broyles, George R. *Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Raymond Carro Dusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E.
Reaumont, Flovd Burton
Boyd, William Thomas
Compton, John A.

COLGATE DISTRICT Hunt, Edward C.

Johnson, Oliver Ray Meagher, Francis Joseph Randall. Earl Roscoe *Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

Kelly, A. T. Knight, Lieut, Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Mellerup, Fred H. Mess, Lieut. Charles T. Netherton, Raymond Wayne Royster, Seret. Joseph A. Teachenor, J. L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W. Johnson, Samuel T

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James, Ed. Judd, R. H.

Alstrom, Frank A.
Brown, Ira A.
Burkleo, Dan
Butter worth, William Z.
Corlew, Harland Hall
Devlin, John A., Jr.
Dickson, John
Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. *Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

DRUM DISTRICT

Lohse, Lieut. Marcel P. Michael, John L.

ELECTRA DISTRICT Kimball, Oliver M. Almball, Onver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A McKenzie, Ralph

FRESNO DISTRICT

Gomes, Carl Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold

MARIN DISTRICT Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

De Rosa, J. Esenman, Paul G. Gavin, Harold J. Hefner, Chester H. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E. Hubbard, Sergt. H. W.
Johnston, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

*Killed in action on or about November 9th, 1918.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William Young, Joseph P.

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton Patterson, Sergt. A. Earl Ryan, R. Stearns, O. J. Stearns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

Gash, Lieut. Frank Taylor

Beloud, Leon C. Earl, George

Beveridge, James

Kent, James Cody

NAPA DISTRICT Mayfield, James M.

Osborne, Lieut. Butler J.

Snow, Wilbur Roland

Taylor, Albert P. Taylor, Lieut. Cary P.

Fairchilds, John H.

Sutcliffe, Lieut. Harold T

NEVADA DISTRICT

Snell, Verne C. Richards, James

PETALUMA DISTRICT

Jones, Claude O.

PLACER DISTRICT

Leary, Jerry REDWOOD DISTRICT

Deloy, H.
Fulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
Harcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.

Anderson, W. O.
Boulware, Wm. F.
Bryggman, Emil W.
Budalich, Oialy A.
Gaussou, Jean
Casey, T.
Chase, Corpl. H. A
Clausen, J. J.
Cullen, John P. *Killed in action in France, Oct. 1st, 1918.

> SACRAMENTO DISTRICT Coyle, William Doyle Grandall, Geo. H. Daigle, John M. Dick, Silas S.

Dick, Silas S.
France, Fred Rhodes
Hochderffer, W. E.
Hornbeck, John Chas.
Johnson, William Max
Klein, Earl Everett Logan, Raymond M.

Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Newington, David
O'Connor, Edward T.
Olsen, Albert
Raymond, Harold A.
Richeson, Merle C.
Riggles, R. F.

Jennings, Edward J.
Johnson, Corpl. Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Lundquist, Leonard L.
Mengel, Henry

Peers, G. A.
Raynard, Duncan
Sampson, L. E.
Sebben, J. E.
Smith, Corpl. R. F.
Strofeld, George
Thane, Alexander
Uhlenberg, Louis H.
Yost, Charles Z.

Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
*Suggett, Archie Dean

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.) SACRAMENTO SUPPLY DISTRICT

Jackson, Claude E. Jones, Verne H. Kinz, William J.

Beeler, Joseph J. Black, Marion Derr, Harvey Dyer, John B.

Bigelow, Ernest G.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Busses, George D.
Cameron, John

Anderson, John L. Anderson, Wm. Elmer Baker, Joseph Baugh, R. W. Belluomini, Primo J.

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt Harold S.
Francouer, Raymond J.
Gewirtz, A.

SAN FRANCISCO DISTRICT

AUDITING AND ACCOUNTING DEPARTMENT Carew, Corpl. Clement J.

> BOOKKEEPING DEPARTMENT Gibney, Walter Haiden, Walter Inteman, R. Jacobsen, Earl D. Keating, Arthur Edward

Gilhuly, Aloysius M.

Koch, Carl Locke, Harry M. McKenzie, Alfred

Lindsey, Elroy M. Murphy, Thomas J.
Suters, F. X.
Wilson, Herhert E.
Wilson, Reginald St. Clair

SAN FRANCISCO DISTRICT-Concluded.

Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Capt. Guy A.
Beatie. Gerald
Biehl, Lieut. P. F.
Brady, George B.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F.
Clark, Lyle G.
Cook, Joseph
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold
Durand, Milton J.
Erbbburg. Sergt. C. W. I.
Erbbburg. Sergt. C. Durand, Milton J. Eichhaum, Sergt. C. W., Jr. Ellis, Clarence L.

COLLECTION DEPARTMENT

O'Connor, Charles A. Oliver, Adrian Pierce

Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

Shea, Cornelius Thomas Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

ELECTRICAL DEPARTMENT

ELECTRICAL
Estes, Sergt. Melville N.
Fogalsang, W. J.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerber, Harold
Gilbert, Paul H.
Glasson, Pearce
Grilfin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward Haughy, Corpl. Edward G. Henion, Floyd Hildebrand, Ernest Honnef, Henry Hull, Sergt. Ray L. Hunnel, Bryan Jackson, George Jacobs, Samuel Leonard Kennedy, Donald S. Kobylinski, Walter Locks, Herman J., Jr.

Madden, JosephJ. Martin, William T. McDougall, Chas. A. McKinnon, J. P. Merkelbach, Corpl. Julius Merkelbach, Corpl. Julius Meyers, Alfred Henry Miller, Sydney Henry Ogilvie, Clarence H. Ostrowski, Ray Parker, A. J. Peterson, Ernest Andrew Peterson, Ernest F. Pippey, William J. Pringle, Sergt. Alec. Rasmussen. Nela Goldman Robinson, Gordon Roche, Wilfred Patrick Roseberry, Edwin Bruce Roseberry, Edwin Bruce Scannell, Florence Schultz, Kurt William Seifkes, Sergt. Lane F. Shields, Lieut. Garrison F.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Capt. R. D.
Stohler, Adolph
Sundberg, Emil
Sweeney Michael
Szczepanski, Edgar M.
Thompson, Capt. A. R.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Waters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action September 29th, 1918.

GAS DISTRIBUTION DEPARTMENT

Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D.

Gowana, Robert B. Hansen, John T. Johnson, Sergt. Alhert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herhert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louia Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

GAS MANUFACTURING DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McGallum, E. A.

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Doherty, James Hallahan, Maurice Hanley, Leo J.

Ambler, J. R. Black, John

RECORDS DEPARTMENT Hughes, Percy Anthony

McDonald, Wm. John

Abercrombe, Corpl. Donald Andresen, Corp. Carl. Blair, Walter B. Clark, Richard Clark, William

Faight. Corpl. Forrest W. Flint, Lieut. Arthur P.

Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Burns, Raymond J. Caldwell, Lieut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix, Francis L.

Bischoff, O. E. Boots, Benjamin

SAN FRANCISCO SUPPLY DISTRICT Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John Lang, R. T. McCarthy, John McNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J.

SAN JOAQUIN DISTRICT Hunt, Lieut. Herbert Tevis Martin, Lieut. David G. McIsaac, Dan Olsen, Melvin L.

SAN JOSE DISTRICT

Candello, Lorenzo
Carroll, Louis
Chaboya, Wilbur Clarence
Charles, Lieut. Eugene H.
Coyle, Dan K.
Erbentraut, Edwin Otis
Faulkner, Chas. C.
Fiman, Edward F.
Frederickson, J. C.
Frier George S. Frier, George S.

Hale, Lieut. C. St. John Hall, Sergt. Evans E. Harkness. T. J. Jensen, Elmer D. Johnson, Capt. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J.

'n,

Riley, Norman Sidney Young, C. Guyler

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L.

Riesen, Alvin Rowe, Lieut. Ernest W. Roy, Harvey Leon Singleton. Paul Sprung, Lieut. Stanley W. Stojanovich, Tony Sucss, Walter R. Tarp, James P. Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Ross, Mervyn F.

Short, Ralph C.

SOLANO DISTRICT Moore, George R.

VALLEJO DISTRICT

Argabrite, Lieut. Walter M. YOLO DISTRICT Grandquist, K.

Howard, Everett J.

Morgan, Mervin E.

AUXILIARY ROLL OF HONOR

RED CROSS Curtis, Miss Letitia A. (Head !Office) Y. M. C. A.

Traxler, Jesse E. (Alameda Co. District)

The Financial Side of "Pacific Service"

NEW BUSINESS DEVELOPMENT

The new year opened with a net gain of 2,362 customers in January, 1919, as compared with a net gain of 2,007 in January, 1918. The total number served at the close of January, 1919, was 479,374, a gain of 26,710 compared with January 31st, 1918.

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF JANUARY 31ST

January 31st	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	101,136	42,158	5,303		148,597
1908	123,023	55,239	5,514		183,776
1909	131,172	62,656	5,767		199,595
1910	140,102	71,143	6,377		217,622
1911	153,463	87,971	6,921	4	248,359
1912	177,286	103,363	7,476	105	288,230
1913	192,284	116,539	7,306	223	316,352
1914	208,655	133,314	8,526	296	350,791
1915	221,483	149,852	9,008	341	380,684
1916	227.014	166,523	9,404	382	403,323
1917	233,278	179,666	9,801	404	423,149
1918	244,020	195,473	12,720	451	452,664
1919	256,059	210,225	12,625	465	479,374
ain in 12 years	154,923	168,067	7,322	465	330,777

A Few Points of Interest in Last Year's Operations

Scrap Sales: War demands and the unprecedentedly high prices arising therefrom brought about an exceptional opportunity for the disposition of all kinds of scrap materials during the year 1918. Full advantage was taken of this condition, and there is today probably less scrap and discarded apparatus on the system than at any time in the Company's history. Total sales during the year of classified scrap, ranging all the way from platinum to old rubber boots and floor sweepings, aggregated over 3,505,000 pounds, for which the total sum of \$168,427 was realized.

Wages: Total amount paid out in wages and salaries during 1918 was \$5,307,752. This was \$404,008 less than in 1917, due to the limitation of construction work necessitated by war conditions.

Sales of First Preferred Stock: Orders for First Preferred Six Per Cent Stock received last year from the Company's customers and others living within its territory aggregated \$255,400, of which \$156,000 was supplied from treasury stock. In view of the fact that no effort was made during the year to market this stock, advertising and all other forms of solicitation having been discontinued, this is striking evidence of the high regard in which this stock is held as a medium of local investment. The Company will continue its policy of having some of this stock available at all times to meet the demands of its customers and other local investors.

Thrift Stamps: Sales of War Savings and Thrift Stamps through the offices of the Company aggregated, at the close of 1918, \$62,714.89. Outside of the Head Office in San Francisco the best record was made by our Winters office, which has to its credit sales aggregating \$11,480.64.

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - -EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR
A. F. HOCKENBEAMER - - BUSINESS MANAGER Issued the middle of each month

Year's subscription\$1.50 Published by the

PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

FEBRUARY, 1919

No. 9

EDITORIAL

That the entire State of California is awakening to a realization of the serious situation that confronts her in the restricted development of her natural resources is evidenced by the manifestation of an active interest in the subject on the part of the interior press.

The San Francisco Chronicle for some time past has been calling the attention of its readers to the situation, but in this bold defiance of the political agitator and professional conservationist it has been compelled to "go it alone," so to speak. But now it is different. Recent discussions before the Home Industry League, the Electrical Development League and other kindred associations in San Francisco have furnished a theme for editorial comment by leading journals in various sections of our Golden State where opportunity is actually knocking at the door. And it is with great pleasure that we observe this awakening from an almost apathy which threatened to retard the golden future that we have all claimed as assured for the well-favored land we live in.

The interior press is now voicing the sentiment of all thinking people that in the development of hydro-electric power lies the future prosperity of California. The price of fuel, both coal and oil, is fast becoming prohibitive, and difficulty in securing fuel is being felt in all large manufacturing centers, with the result that fewer factories are being established than would be the case with cheap electric power at their disposal. On the other hand, with the development of the "white coal" the fuel question reaches a happy conclusion. An almost unlimited supply can be drawn from the snow waters of California's mountain ranges, and all that is needed is the enterprise to develop this force.

The Stockton Record, the journalistic spokesman for the great valley of the San Joaquin, in commenting upon the situation, observes as follows:

An American engineer says the war made the world power-hungry. civilization resting on powerdriven machinery every want is quickly translated into a cry for more power. Man's capacity to work or war depends on the power he can apply to the task. The demand for ships, food, clothing, munitions or transport is but a call for power. Leisure, education, progress wait on power.

tools today draw their Man's strength from the energy of heat and falling water, not from the muscles of men or animals. In peace or war the strength of modern nations is the strength of the mechanical power its citizens wield.

Today we use about one horsepower per family. Each horsepower equals the strength of eight men. Each family today possesses eight tireless slaves who, if their labor were properly applied and rightly distributed, would bring comfort to all. But it could easily be a hundred.

Mr. G. McM. Ross, a well-known Stockton engineer, in referring to the possibilities of steel industry development in California, is quoted as declaring that this depends upon water-power develop-The great deposits of chrome, manganese and tungsten unearthed in the West under the urge of war can be utilized in ferro compounds through the heat of electricity cheaply generated in our mountain districts. If, therefore, ad-vantage can be taken of opportunities which nature has so generously set before us in California there will be no need of shipping the raw material products across the continent to the steel mills in the East and paying another high freight charge to bring the manufactured steel back here to be used in building tractors, automobiles and various other necessities.

The Sacramento Union, voicing the needs of the great valley of the Sacramento, views the situation from the standpoint of projected cultivation of the soil through added irrigation facilities. discussing this it observes:

When the transition comes, it will mean also a shifting of the great centers of manufacturing populations. No other State in the Union has hydro-electric resources like those which are to make California a land of many millions and its cities the industrial centers of the world. The proposition needs no argument; it is apparent on its face. Behind the great manufacturing centers must develop intensified agriculture to support them. Behind both is California climate, which makes industry a joy twelve months in every year.

The California fruit industry to date is but an object lesson to the tremendous industries certain to grow out of it in the years which are just ahead. With new processes of preservation waste will disappear and the world be given the benefit of production of fruits and vegetables not absorbed by the home markets. The commercial possibilities of the

situation are dazzling.

The Fresno Republican takes a vast amount of territory into its embrace when it describes the vista of golden opportunity that this prospective development of hydro-electric power in California opens for both the Sacramento and San Joaquin valleys. And the Oroville Register has an up-to-date thought in advocating the location of new industries along the route traveled by the hydro-electric transmission lines. In a recent editorial it remarks:

Hydro-electric engineers are coming more and more to the opinion that the most economical use of hydroelectric power requires the factories which use the power to be located as near as possible to the source of generation. There has been little attention paid to the losses of hydroelectric power through long-distance transmission or to the cost of such transmission; and yet the cost of long-distance service, in upkeep upon a power line, interest upon investment and loss of power, is estimated to be fully one-third greater than the cost of a service over a short line. In other words, if there could be direct service to factories out of a power plant, or practically direct service by reason of a very short line, the power plant could increase its income by one-third or greatly reduce rates.

Power experts are a unit in declar-

ing that the tendency will be more and more in the future for industrial concerns to seek sites near power plants, particularly if transportation facilities are convenient. There are, of course, some products that by reason of bulk or otherwise, require that the factory shall be located where the raw material is found. But there are other plants to which the raw material is hauled, and where cheap power is will be the determining factor in the location of the factory.

Along similar lines our old friend the *Chronicle* editorializes in the following terms:

There is a condition of affairs in the congested sections of the country created by the scarcity of coal that is having the effect of directing attention to the almost illimitable hydroelectric resources of California, and the probability that their utilization will have the effect of relieving the situation on the Atlantic seaboard, the gravity of which the urgent appeals of the National Fuel Administration to householders and others to avoid waste clearly exhibit.

The publications of this branch of the administration deal timidly with the sociological aspect of the fuel question, but the statistics presented make possible only one inference, namely, that something in the nature of a readjustment of population and industries will become an economic

necessity in the near future.

Changes of this nature are not brought about in a day, but it is inevitable that, in the not very remote future, in order that the United States may make the best use of its resources, the center of manufacturing and, with it, that of population, must shift from the region in which the supply of dear fuel, limited in quantity, is constantly diminishing to the section of the Union in which an inexhaustible supply of cheap power invites the economic pursuit of manufacturing and other industries.

The statement has been made that under normal conditions \$50,000,000 could easily be expended in the extension of hydro-electric facilities in California. The possibilities in the way of results from such an expenditure are almost unlimited. Conditions today require some change in order that California may grow and prosper as she should. We pray the change may come soon.

Tidings From Territorial Districts

Alameda County District

Ever seen our bookkeeperettes?

Well! they're some girls

And you'll like them

And when the Kaiser quit

- of course they quit

And Garcia ought to have seen 'em.

And Adele began to yell

And sing

And everything

And "Well done," said Sheldon

And "It's a noble race," said Miss Case

And "Wilson won," said Miss Christianson

And Dell said "Ring the bell"

And "I will," said young Magill

And Beek, he couldn't speak And "Oh, he'll soon be free

And back to me," moaned little Marie

And Frenchie cried

And Tess sighed

And it was awful

And there's Miss Costella

And she's got a fella

And he's-Jake

And she was glad

And so was Gladys

And Parratt blew in

And had to grin

And he's a nice fellow

And means well

And anyhow the big war's over.

What was John Charles Jordan doing on that now famous night at San Le-an? Unfortunately his visit aroused the village dogs as he was hastily beating it to catch a late car. Billie Shuhaw, who pre-sides over that domain of "Pacific Service," says Charles found San Le-an a wideawake town, but Bill's language is always loyal to his home place. Those yelping dogs even succeeded in awakening the town watchman, Charles coyly retorted, recalling his experience with that official. Anyway, Ludie Geisenhoffer, who commutes from there to Oakland, said he had his goat. Perhaps Charles wanted to see his stock and Billie Shuhaw at the same Charles always has future plans, so if Charles had any stock prospects he would naturally confer with Mr. Shuhaw. Bill proposed a stock concern to can grasshoppers for fishermen's bait. Perhaps Charles wanted to swop treasury stock. However, Ludie now says he did not say he had his goat, but it was the town watchman, Joe Fetardo. He asked Joe what Charles was doing and that was his reply. Mr. Shuhaw says Joe used imported language, not his mother tongue, for saying he didn't know. We are still in the dark. A few days later a package came to the office postmarked San Leandro, addressed to Charles, care of Mr. Furniss, as if Charles was not well known. It was a shoe. Whether he lost it or it was a thrown one it was relayed to Oakland with more publicity than the town watchman and dogs stirred up. It proved, however, to be of infantile size. Miss Leal said it was cute and that it was a compliment to Charlie's foot. Still, we don't know what Charles was doing in San Le-an.

.

R. E. Pullen has returned to the Collection Department, having left July, 1917, with Battery "E." He left for overseas the following July, arriving at Liverpool, thence to Bordeaux, France, where he entrained without reaching the front, departing for home December 23, 1918. He says it was all play; he played in the band. But it put the ginger in the boys, Bob!

George W. Jordan is back to statement taking again. He served two months at Fort McDowell, Angel Island, and, as he adds, without any chances of becoming one.

Ken Naismith of gas station "B" was ordered East for training. He got as far as New Orleans on the train and was ordered back, released, which was training unexpected.

E. J. Lawson of the substation department returned after serving in the U.S. merchant marine. He made two trips to Mexico.

N. Z. Hendricks has returned to substation work from the Riverside March flying field, where he was awaiting orders for overseas service. He took the course at the university on airplane engines and construction and at Riverside completed 100 hours of flight, reaching an altitude of 6000 feet.

H. D. Viers is back as an oiler after having served in the spruce camps, Washington, getting out airplane timber.

Jim Gallagher, the veteran of electric distribution, believes in brevity. He never bursts into print or speech unless he has "got" something to say. He says he has handled all kinds of lines and meters, but not the poetical stuff; anyway he submits this as sure good:

THE LINEMAN

The lineman is a busy soul, In every land and all the time; He works each day from pole to pole, And finds a job in every climb.

The Judson Manufacturing Company, Park Street, Emeryville, is the latest factory to start a cafeteria for its employees. The problem for a suitable location was solved by building out onto the San Francisco Bay. The plant occupies the shore line. The building is 150 feet long and has a very picturesque setting looking out over the bay islands and through the Golden Gate. Office employees only will be served, but this arrangement will probably extend in welfare work so as to provide a warm substantial lunch for the large working force. Gas is used for fuel.

The office received a letter in which the writer stated she was an old lady in failing health, which the feeble trembling handwriting indicated, and enjoyed the comfort of an electric heater. The electricity had of late been going off during the day. A friend told her it was not so in Berkeley. She hoped something could be done so things would be more comfortable through the middle of the day. Investigation found the daughterin-law was pulling the house switch.

Edna Ottman remarked that before marriage a man thinks his girl ought to have wings. After marriage the wings show up in the millinery bill, and yet he is not satisfied. This comes from the girls in the telephone department taking an extension course of the University of California in millinery. Perhaps it is the Oakland school course. Anyway, the science of sewing and harmonizing color has reached philosophy.

O. K. LAND.

HIS GRIT WON HIM HIS SUCCESS

Many of the older members of "Pacific Service" will remember J. A. Barker in the Construction Department under Mr. Wise and Mr. Vensano. His last work with the company was the construction of the classic substation at Cordelia.

While on this work Mr. Barker had to look after the company's boarding house in addition to his more important duties, and one of his most annoying problems was the disposal of garbage from the kitchen. He solved it by purchasing a

few hogs.

The work at Cordelia lasted about a year and a half, and in the meantime the hogs thrived and multiplied, as the guinea pigs did in "Pigs Is Pigs." It was necessary to buy additional feed for them, but when the substation was completed and the hogs sold Mr. Barker found that he had netted the sum of \$725.

This was very easy money, for the porkers had received practically no care or attention. Like Topsy, "they jest growed," and naturally our hero said to himself, "If they do that well on their own hook, what won't they do if I put all the steam behind them that I have used in working for the P. G. & E.? I can't help but make barrels of money. more cement and re-enforcement steel for me."

So, leaving the service of the company, he took all the money he had, some \$1800, and put it into hogs, leased a piece of land near Cordelia, and commenced operations. Inside of six months hog cholera attacked his band and reduced them to eight sows and a boar; practically wiped him out, in other words.

This was a time to ponder, and in his trouble he turned to his good wife for counsel, and it was due to her advice and grit that he decided to tackle the proposition again. So, with two twohorse teams hauling their nine hogs and other belongings, they wended their way to Dixon, to get away from the cholerainfested territory, leased a piece of land and opened up shop again.

Matters progressed favorably in the new location, and about this time (1915) the first crop of rice was planted on the property adjoining Mr. Barker's. He immediately became interested and the next year planted forty acres himself. To use his own expression, he financed this on "jawbone," but it was his indomitable energy and his record for integrity and good judgment made with the Pacific Gas and Electric Company that gave the bankers and merchants confidence in him to the extent of backing him in his venture.

He broke about even on this crop, but felt justified in increasing his acreage to seventy-five the following year (1917), and closed the season with a substantial

profit.

This year he leased more land for a period of three years at \$2.50 per acre, land that had previously never paid the taxes when planted to wheat or barley, but, in his judgment, was ideal for rice culture on account of its adobe character and the proximity of the hardpan. He knew it would hold water like a dishpan, which is one of the prime requisites for rice culture. As a result he has recently harvested a \$25,000 crop from 140 acres, and after all expenses are paid will have \$10,000 net cash and about \$8000 in farming equipment, etc., all paid for.

Needless to state, he has irrigated with the aid of "Pacific Service," and in the three years that he has been operating has paid the company over \$3600 for

power.

By the way, I almost forgot the pigs, but they are still thriving, and have contributed a substantial amount to the above \$10,000.

F. L. Mix, who left the Dixon office in October, 1917, to enter the service, has returned to his old stamping ground. He was among the first to go overseas, carries two service stripes on his sleeve and has run the entire gamut of experiences in the world war, capping the climax when on October 1, 1918, he was severely wounded in the head and shoulder by exploding shrapnel in the battle of Argonne Forest. He has been in the hospitals ever since until a few days ago, when he received his discharge from the base hospital at Camp Fremont and paid us a surprise visit at Dixon.

Needless to say we received him with open arms and enjoyed to the utmost his narration of his experiences and his personal views upon that part of the war he has been in intimate contact with.

He was accorded a warm welcome by his many friends and a large crowd gathered wherever he stopped to exchange greetings. He, of course, was bombarded with questions of all kinds, which he answered very graciously, and he was the cynosure of all eyes. In spite of his serious wounds, Mix appears to be in fine fettle and is anxious to get into the "Pacific Service" harness again. We therefore expect him to report for duty very shortly, and we certainly will be glad to have him back.

C. E. SEDGWICK.

San Jose District

Communications like the following make our labors worth while. We take pleasure in reproducing it for the benefit of our readers:

Joshua Hendy Iron Works, Sunnyvale, Santa Clara County, Cal. Gentlemen:

Due to the unusual storm, no doubt, we were without electricity this morning. I called up your San Jose office about 8:30 a.m. and was promptly informed that men were already out repairing the main feed wires.

Considering that we depend upon electric service entirely for cooking, water heating, lights and household water pump, we appreciate the manner and promptness with which our requirements are attended to.

At this time I might state that during the two years and over that we have been entirely dependent upon your service we have not been without power for a single meal.

The prompt and courteous attention of your men is an asset to any company.

Respectfully,

E. M. Hyland. John D. Kuster.

De Sabla District

After an illness of only six days, George E. Graves, operator at our Coal Canyon power house, died of pneumonia on January 25th, following an attack of influenza. He had been in the employ of the company since July, 1913, and was thirty years of age. He leaves a widow and three small children to mourn him.

I. B. Adams.

Drum District

In order to make repairs at the bottom of the dam at Lake Spaulding it was necessary to secure the services of a diver from San Francisco. One of the discharge pipes had become clogged, and the diver

descended into 90 feet of icy water to remedy the trouble.

Some idea of the task may be gathered from the fact that the diver had expected to be able to remain in the water up to four hours at a time, but he found that the cold rarified air of the mountains made it impossible for him to remain on the floor of the lake longer than fifteen minutes at a time, and the air which was pumped down to him was first heated in a large cylinder.

Yolo District

The Sacramento *Union* of January 5th quotes Mr. J. W. Coons, district manager, as follows:

"Prospects for 1919 are particularly bright. An additional 3000-horsepower load for irrigation is to be distributed in the county. Among the large users are the Conaway tract, 800 h. p.; Sutter Basin Company, 750 h. p.; Reclamation District No. 108, 550 h. p. The balance will be made up by the smaller users. The Alameda Sugar Company has also given notice that several pumping plants will be added and that a much larger acreage will be planted during the year to sugar beets."

Marin District

Harry Eckenroth, who has been employed in this district for a number of years, has been transferred to the San Francisco District.

H. G. RIDGWAY.

Marysville District

P. G. & E. EMPLOYEES DANCE ENJOYED.

The invitational dancing party held in the office of the Pacific Gas and Electric Company here Saturday evening was one of the enjoyable social functions of the past week, and the employees of the company, who were hosts Saturday evening, are planning to give these social affairs once a month. The fact that all reported a good time goes to show that the Pacific Gas and Electric employees are royal entertainers and know just how to do things up right. During the evening punch and coffee and cake were served. Cozy corners were provided and the office decorated with potted plants. Music was furnished for the dancing by Mr. and

Mrs. Earl Wagner and H. Magruder.— Marysville *Democrat*, February 10, 1919.

San Francisco District

During the month in San Francisco District a number of sales were made of the Rector System of gas heating. One of them to the Louis T. Snow Co. at 235 Front Street, where that company has opened up a new and very attractive office. A similar system has been installed to heat the three-story building at 539 Market Street occupied by F. W. Wentworth Company, dealers in fine office furniture. The Rector System is being employed here to heat the offices of the company on the main floor and the splendid display rooms on the upper floors. As previously mentioned in these columns, a complete Rector System has also been installed in the company's building at 820 Howard Street for the Gas and Electric Distribution Department. smaller sales have been made during the month, and the business continues to be very promising.

The industrial gas and heating bureau of San Francisco District is fortunate in securing the services of two new men, who will devote their energy in the future mainly in furthering the use of the Rector System in San Francisco. One of these men is Mr. F. Maloney, who has been connected for years with the sales department of H. L. Doherty & Co. Maloney has had a wide experience in house heating and is well equipped to offer to our consumers technical advice which will be of great value to them. The department has also secured the service of Mr. Harry Eckenroth, formerly with Mr. L. H. Newbert's department and who has been with the company a number of vears. Mr. Eckenroth has been very successful in the sales end of the business in the past, and it is to be expected that he will maintain his reputation in his new work.

This department announces an industrial installation worthy of note for Magnus & Lauer, 139 Fremont Street, who are manufacturing flavoring extracts. A varied line of flavoring extracts are made by this company, all of which are of the finest quality, and the factory is one of the largest and most modern on the Coast. The industrial gas installation

consists of a ten-horsepower Kane boiler which is automatically controlled and gas-fired. This boiler is supplying steam for sterilizing and also a number of steam-jacketed kettles. A normal pressure of about seventy pounds of steam is carried and the automatic regulator on the boiler varies the gas supply in direct proportion to the load on the boiler at all times. No attendance whatever is necessary; the boiler is lighted in the morning and it automatically takes care of the load for the balance of the day. feature assures absolute automatic operation, and, in addition, makes for considerable economy, because the amount of gas which it uses is just sufficient at all times to take care of the load on the boiler. There is no loss of fuel due to the popvalve opening frequently, and as the pressure is maintained reasonably constant it assures a constant temperature at the cooking and steaming utensil, as, of course, the temperature of the steam varies with the pressure on the boiler. These automatic boilers are a means of supplying live steam for manufacturers at a very reasonable cost and are adapted in installation and operation to almost any type of building or factory where their services may be required.

Industrial gas will be used in the experiments now being conducted by the United States Government with dehydrated vegetables at the demonstration plant now operating in San Francisco. Gas is being employed for this work as it has been found to be the most clean and satisfactory fuel for the purpose. Mr. Godfrey of the Industrial Department has been assigned to this work, which promises to become one of the most important industries in the country. periments conducted so far show that this method of treating fruits and vegetables will mean a big saving for the producer and will place in the hands of the consumer a product fully as satisfactory as any which he has had supplied to him in the past, and at a much lower H. M. CRAWFORD. cost.

Pacific Trading Company, 331 Battery Street, has increased its installation by 27½ horsepower, which is one of the indications of the rapid growth of this concern.

The Oscar Krenz Copper & Brass Works, Incorporated, 431 Folsom Street, manufacturers of copper coils, pots and kettles, has increased its installation by 25 horsepower. Business must be good in the copper line.

No. 171 Minna Street has been chosen as the new location for the factory of the Golden Pheasant Company, the total installation being about 25 horsepower. This new home consists of a five-story building. Now for more sweets.

The National Ice Company has made an additional installation of 25 horsepower, 234 volts, direct current, on the west side of Seventh Street, 255 feet north of Brannan Street, for the operation of a pumping plant.

F. S. GRAY.

IN MEMORIAM

It is with profound regret we mention the death of James Dixon of the Collection Department of the San Francisco District on January 19th, after a short illness. His passing away is a distinct loss to the department, and his pleasant smile and genial disposition will be missed, not only by everyone in the local office, but by many thousands of our consumers.

Mr. Dixon entered the employ of the company in September, 1906, and worked continuously in the interest of the company since that time. "Pacific Service" loses a loyal and faithful employee. He is survived by his wife, who until her marriage was employed in the local office, and whom we all remember as Miss Camille Siegel, and young daughter; by several brothers and sisters. To them we extend our sympathy.



BUILT FOR SERVICE



Built-up Steel Frame

Rolled Steel Frame

Westinghouse

TYPE "CS" MOTORS



Built for Service Westinghouse Type "CS" Motors

---will insure the highest operating efficiency. These motors are very simply constructed, possess liberal shaft and bearing sizes and have practically indestructible rotors.

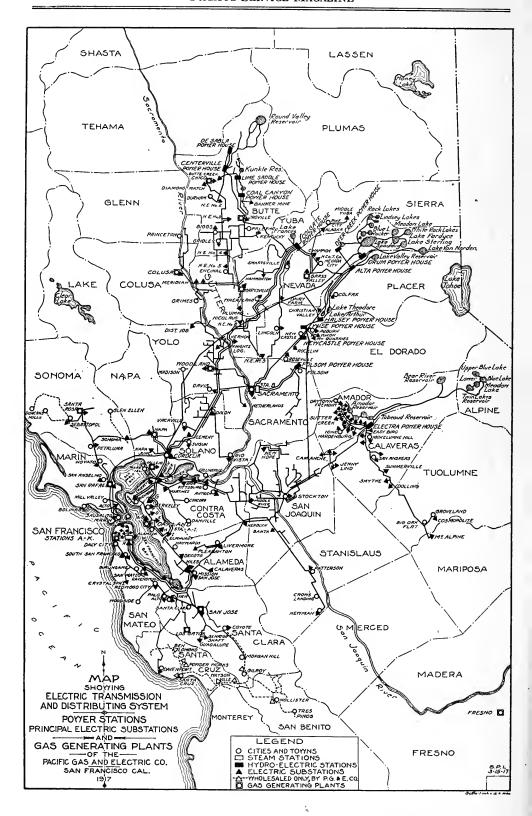
Their comparatively light weight yet great mechanical strength is due to forged steel construction. Westinghouse Type CS Motors require practically no attention and have a high overload capacity that has made friends for them in almost every industrial field.

Westinghouse Electric & Manufacturing Co.

EAST PITTSBURGH, PA.

San Francisco Office, 1 Montgomery St.

Los Augeles Office, 7th & Spring Sts.



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	1NI	DIRECTLY	TOTAL			
	No.	Population	No.	Population	No.	Population		
Electricity	128	1,210,830 1,219,690 57,302	48	132,825	176	1,343,655		
Gas	51	1,219,690	2	132,825 8,600	53	1,343,655 1,228,292 76,600		
Water (Domestic)	11	57,302	8	19,300	19	76,600		
Railway	1	76,000			1	76,000		

CITIES AND TOWNS SERVED BY COMPANY:

		CITIES AND IC	,,,,,,	ERTED DI COMI	**** * * *		
Place Po	opulation	Place Pop	ulation	Place Po	pulation	Place Popula	ation
Alameda	30,000	El Verano	400	MokelumneHill	300		2.500
Albany	2,300	Emeryville	3.000	Morgan Hill	750		5.000
Alvarado	700	Esparto	250	Mountain View	2,500		5,000
Alviso	550	Fairfax	250	Mt. Eden	2,300		3,600
4-1Amador City	1.100	Fairfield	1.000	²Napa	6.500		1,000
Angel Island	280	Fair Oaks	300	2-6Nevada City	2,900	Saratoga	300
Angerisianu	2.000	Felton	300	Newark	505		3.000
	300		2.000	'Newcastle	950		1.950
Aptos		Folsom	2,000		1,200	*Sebastopol I	
Atherton	250	Forestville		Newman		Shellville	200
4-6Auburn	2,800	¹Fresno	48,867	Niles	1,000	Sheridan	250
¹ Barber	500	Gilroy	2,900	Novato	400	Smartsville	300
² Belmont	375	Glen Ellen	900	² Oakland	225,000	Soquel	400
Belvedere	550	¹ -8Grass Valley	5,200	Oakley	200		1,290
Benicia	2,400	Gridley	1,800	*Occidental	600	South San	
Ben Lomond	800	Grimes	350	² Oroville	5,000	Francisco	3,750
² Berkeley	65,000	Groveland	250	Pacheco	250	² - ⁷ Stanford Uni-	
Biggs	500	Guerneville	780	² - ⁷ Palo Alto	6,000	versity 2	2,600
Bolinas	200	Hammonton	500	Paradise	500	4-2Stockton 42	2.000
Broderick	600	² Hayward	4,000	Patterson	500	Suisun	800
² Burlingame	4,000	² Hillsborough	950	Penn Grove	300	Sunol	340
Campbell	700	⁶ Hollister	2,500	Penrvn	250	Sunnyvale	1,650
Capitola	275	⁰-6Ione	1,000	Perkins	250	Sutter City	250
Cement	1,000	Irvington	800	² Petaluma	7.500	*- Sutter Creek	1.300
Centerville	850	*-* Jackson	2,100	¹ Piedmont	3,500	Tiburon	350
2Chico	15,000	2Kentfield	500	Pike City	200	Tres Pinos	300
*Colfax	500	*Kenwood	200	Pinole	1.800		1.250
²Colma	1.800	Knights Land-	200	Pittsburg	6.000		5.500
² Colusa	2.000	ing	400	Pleasanton	1.500	Vineburg	200
Concord	850	Larkspur	2.000	Port Costa	1,000	Walnut Creek .	500
Concord	300		1,500	Redwood City.	4,200	Warm Springs.	200
	350	6-8Lincoln Live Oak	300	2-6Richmond	16,500	Warm Springs.	5.000
Corte Madera.		Live Oak	2,500	Rio Vista	1.000		500
1-1Cotati	200		450	AD1-1	900	Wheatland	
Coyote	200	Lomita Park		Rocklin	300		1,200
Crockett	3,000	Loomis	450 500	Rodeo			5,000
Crow's Landing	300	Los Altos		6-2Roseville	4,200	Woodside	225
Daly City	5,500	Los Gatos	3,000	Ross	900	Yolo	350
Danville	400	Madison	250	Sacramento	76,000	² Yuba City	1,750
Davenport	300	Mare Island	500	San Andreas	750		
Davis	1,700	Martinez	3,500	² San Anselmo	3,000	m + 1 C'+1-	
Decoto	300	² Marysville	6,000	San Bruno	1,500	Total Cities	
'Dixon	1,200	Mayfield	1,100	San Francisco	580,000	and Towns1,422	2,522
Drytown	225	¹Menlo Park	1,100	² San Jose	45,000	A.I.I. Curbumban	
Duncan's Mills	200	Meridian	225	'San Juan	550	Add Suburban	1 506
*Durham	300	Millbrae	300	² San Leandro	5,000	Population 400	0,586
•- Dutch Flat	750	Mills	350	² San Lorenzo	400		
Eldridge	500	Mill Valley	3,200	'San Martin	200		
²-6El Cerrito	1,200	Milpitas	350	² San Mateo	6,000	Total Popula-	
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1,82.	3,108
a	000	2.2.2.2.311 04113 000					

Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

E-Gas, Electricity and Water.

Gas, Elect. and St. Railways.

Electricity and Water.

Electricity supplied through other companies.
 Gas supplied through other companies.
 Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	.210,225
Number of Gas Consumers	256,059
Number of Water Consumers	. 12,625
Number of Steam Consumers	. 465
Total number of consumers	479 374

Operates 13 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

ZVERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York). are able to place the Company's entire facilities at your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, N. Y. Ten Eyck Building Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORR, MD.
Munsey Building
Boston, Mass.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg. Marine Bank
CHICAGO, ILL.
137 So. La Salle Street
CINCINNATI, OHIO
Fourth Natl. Bank Bldg.
Foveland, Ohio
Minneapolis, Minn.
McKnight Building

DAYTON, OHIO Mutual Home Bldg. DENVER, COLO.
Fitst National Bank Bldg.
New Orleans, La.
301 Baronne Street DETROIT, MICH. 147 Griswold St. HARTFORD, CONN. Conn. Mutual Bldg. Conn. Muttai Didg.
Indianapolits, Ind.
Fletcher Sav. & Trust Bdg.
Fletcher Sav. & Trust Bdg.
Farmers Bank Bldg
Farmers Bank Bldg
FortLand, Ms.
396 Congress Street
PortLand, Ore.
Railway Exchange I
Rovidence, R. I.

NEWARE, N. J. 790 Broad Street PHILADELPHIA, PA. 1421 Chestnut Street PITTSBURGH, PA. Farmers Bank Bldg. PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I. Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. San Francisco, Cal. 424 California Street SBATTLE, WASH. Hoge Building Springfield, Mass.
Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W WILKES-BARRE, PA.
Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson	
HENRY E. BOTHIN	
John A. Britton	
W. H. Crocker	
F G Drum	

JOHN S. DRUM F. T. ELSEY D. H. FOOTE W. G. HENSHAW A. F. HOCKENBEAMER

JOHN D. MCKEE JOHN A. McCandless C. O. G. MILLER NION R. TUCKER GEORGE K. WEEKS

OFFICERS

F. G. DRUM										President
										Vice-President and General Manager
A. F. Hockenbeamer										Second Vice-President and Treasurer
D. H. Foote										. Secretary and Assistant Treasurer
										Assistant Treasurer
Chas. L. Barrett .										Assistant Secretary

HEADS OF DEPARTMENTS

E G BATTA										Conculting Engineer
										Consulting Engineer
W. B. Bosley										Attorney
R. J. CANTRELL .										Property Agent
J. P. Coghlan										Manager Claims Department
C. P. Cutten										. Attorney, Rate Department
P. M. Downing .						(٦ŀ	ιiε	f	Engineer Electric Department
E. B. Henley										. Manager Land Department
JNO. H. HUNT										Purchasing Agent
J. P. JOLLYMAN .]	Ξr	ngineer Electrical Construction
E. C. Jones									С	hief Engineer Gas Department
F. S. MYRTLE									Ν	Ianager Publicity Department
L. H. Newbert .								M	aı	nager Commercial Department
GEO. H. RAND										Manager of Collections
R. R. Reidford .										General Auditor
										. Superintendent of Supplies
										Valuation Engineer

DISTRICT MANAGERS

	JOINIGI MANAGENS	
DISTRICT	HEADQUARTERS	MANAGER
Alameda County	Oakland	F. A. LEACH, JR.
Снісо	Chico	H. B. Heryford
Colgate	Colgate	. MILES WERRY
Contra Costa	Martinez	Don C. RAY
DE SABLA	De Sabla	. I. B. Adams
Drum ,	Colfax	. James Martin
Electra	Electra	W. E. Eskew
Fresno	Fresno	M. L. NEELY
	San Rafael	
	Marysville	
	Napa	
	Nevada City	
	Petaluma	
	East Auburn	
	Redwood City	
Sacramento	Sacramento	C. W. McKillip
San Francisco	San Francisco	HENRY BOSTWICK
San Joaquin	Stockton	J. W. HALL
San Jose	San Jose	J. D. Kuster
Santa Rosa	Santa Rosa	M. G. HALL
	Dixon	
	Vallejo	
	Woodland	

Pacific Service Magazine

Volume X



Number 10

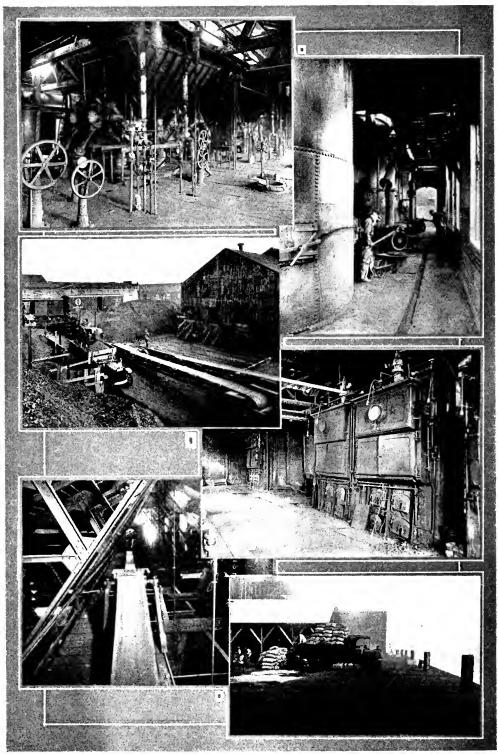
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for March, 1919

VIEWS OF GOVERNMENT CHARCOAL PLANT AT THE POTRERO, SAN FRANCISCO			F	ron	tisp	iece
"PACIFIC SERVICE" AND AMERICAN GAS DEFENSE	Capt U.	. W. S. A	E.	Bro	ph_{i}	y 303
COAST SECTION OF THE N. E. L. A. TO HOLD VICTORY CONVENTION						315
WELFARE						316
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION						317
NEWS OF OUR BOYS IN THE SERVICE OF THE UNITED STATES						320
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A.F	Н.				323
EDITORIAL						324
TIDINGS FROM TERRITORIAL DISTRICTS .						326
THE "PACIFIC SERVICE" ROLL OF HONOR.						330

Index to Advertisers

Allis-Chalmers Mfg. Co iii	Sprague Meter Co	iv
Chaplin-Fulton Mfg. Co v	Standard Underground Cable Co	v
General Electric Coi	Steiger & Kerr Stove & Foundry Co	ii
Graham Mfg. Co., Jas		iii
National City Company 4th page cover	Western Pipe & Steel Co. of California	İ٧
Pacific Meter Coiv	Westinghouse Electric & Mfg. Co	νi
Pelton Water Wheel Coiv	Wood, R. D., & Co	11



The Chemical Warfare Service charcoal plant on the site of the old Independent Gas Works at the Potrero, San Francisco, property of the Pacific Gas and Electric Company. Reading left to right from the top down these views show: (1) Carbonizing units on upper floor of works; (2) Downstairs view of same; (3) Unloading cars by portable conveyor; (4)Boiler room; (5) Distributing conveyor above feed hoppers; (6) Shipping shed and wharf.

PACIFIC SERVICE MAGAZINE

Volume X

MARCH, 1919

Number 10

"Pacific Service" and American Gas Defense

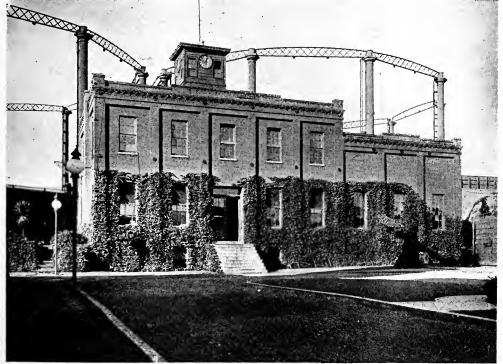
By W. E. BROPHY, Captain Chemical Warfare Service, United States Army.

[The following article is from the pen of a well-known Eastern expert in chemical engineering who was one of the first to enter the Chemical Warfare branch of the United States Army service during the late war. The operations he relates were conducted under his supervision at the Potrero Gas Works of the Pacific Gas and Electric Company and are of special interest to our readers, not only from their scientific value, but, also, because they describe a process which may be said to have actually owed its discovery to the exigencies of war conditions.—Editor Pacific Service Magazine.]

During the early months of the year 1918 the Gas Defense Division, Chemical Warfare Service, U. S. Army, laid plans for increasing the output of gas defense chemicals and apparatus in this country. One of the most important commodities manufactured by the Chemical Warfare Service was charcoal. This charcoal is not the ordinary kind that one encounters in life's daily routine, but is

a highly developed chemical product. Nor can all classes of carbonaceous materials be used for the production of this charcoal, as the resulting product must possess infinitesimal pores, thereby presenting a large surface for contact with toxic gases.

After extensive investigations had been carried out by this branch of the army, it was determined that such ma-



Office building at the Potrero Gas Works. The second floor was used by the Chemical Warfare Service for a headquarters during the period of charcoal manufacture.



Old Independent Gas Works before taking over by Chemical Warfare Service.

terials as nut shells and fruit pits, principally the former, gave the most satisfactory charcoal for gas defense purposes. The total available supply of nut shells in this country and its possessions was absorbed by the Chemical Warfare Service in the early part of 1918, but even this quantity of raw material did not suffice to meet the demand. Consequently, investigations were made for the procurement of fruit pits. In the production of pit-bearing fruit the State of California outdistances all other localities. Therefore, in April, 1918, Lieutenant Leonard Macomber was detailed to tour the State of California, visiting the fruitgrowing sections, conferring with corporations and parties interested in fruit growing and reporting back to headquarters as to the probable annual supply of fruit pits in the State.

In the early part of May Lieutenant Macomber reported that a minimum of 30,000 tons of fruit pits was annually obtainable in California. A conference between Major J. C. Woodruff and the writer in which Lieutenant Macomber's report was considered led to the decision



Another view of the gas works before reconstruction.

to establish a charcoal-producing plant in the State of California.

At that time the Chemical Warfare Service was operating only one charcoalproducing plant. This plant was located in Astoria, Long Island, on the property of the Consolidated Gas Company of New York City. The initial carbonization of raw materials was carried out at Astoria in horizontal gas retorts, and at that time so many retorts had been commandeered by the Chemical Warfare Service that the gas-manufacturing capacity of the Astoria plant was seriously impaired. This consideration of inadequate capacity at the only plant then established, coupled with the fact that the weight of the material would be reduced 75 per cent by carry-



Old generator building whose interior was reconstructed for carbonizing process.

ing on preliminary carbonization in the State of California, thus effecting a tremendous saving in transportation costs, brought about the decision to establish such a plant in California.

The writer was detailed by headquarters of the Gas Defense Division to organize the manufacture of charcoal in California. He arrived in California in the middle of May, 1918, and after investigating all localities in the State decided to build the plant in the vicinity of San Francisco. Researches were carried out with four different corporations, three of these being engaged in the manufacture of bone-black and similar materials, while the fourth was the Pacific Gas and Electric Company. The Independent Gas Works, a standby unit of the Pacific Gas and Electric Company's system, was found after researches had been carried

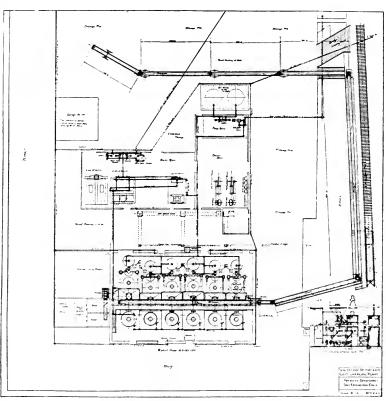
out by Mr. L. B. Jones of the company and the writer to be adaptable to the manufacture of charcoal. This fortunate circumstance, together with the excellent business organization of the Pacific Gas and Electric Company, its firm financial standing, its efficient engineering department and the enthusiastic support, good will and earnest desire to co-operate with the Chemical Warfare Service that was evidenced by officials of the company, convinced the military authorities that the manufacturing should be carried out through the instrumentality of the Pacific Gas and Electric Company.

A contract was drawn up between the company and the U. S. Army and in early June work was started in clearing the property at the Independent Gas Works and redesigning and reconstructing the equipment therein to suit the project in hand. The proposed scheme of manufacture constituted a decided departure

from the then established practice of the Chemical Warfare Service. Based upon the experimental work carried out by Mr. L. B. Jones and the writer, with the counsel and advice of Mr. E. C. Jones, a continuous method of carbonization was evolved. Prior to that time all carbonization had been carried out by intermittent methods. It was decided, inasmuch as the 1918 crop of fruit pits would not be available before

some time in the month of August, to build one large scale unit at the Independent plant and to operate that unit on what supplies could be obtained in the State from the residue of the 1917 crop. In this way defects in design would be eliminated before the total of six units was constructed.

Early in July this first unit was placed in commission, and after a few weeks' operation it became apparent that some changes would be necessary. quently, the old design was abandoned, a new one substituted and construction work was immediately commenced on the remaining five units. It was almost the first of August before the plant was really on a steady operating basis. From approximately August 1st till December 4th, when by order of Colonel Bradley Dewey operation was discontinued, the plant was in continuous operation. During this period 3,223,148 pounds of charcoal were



Plan view of plant as finally laid out.



Bird's-eye view of Chemical Warfare Service charcoal plant at the Potrero, San Francisco.

manufactured. The saving in transportation charges effected by the establishment of the plant in San Francisco totaled over

\$150,000, while the total installation cost of the plant was well under \$105,000. This money saving during the four and one-half months of operation, although considerable, is quite insignificant when compared with the tremendous advantage afforded the U. S. Army in having an extra manufacturing unit in addition to the plant at Astoria, Long Island.

The average daily production in tons for the months of operation is given here:

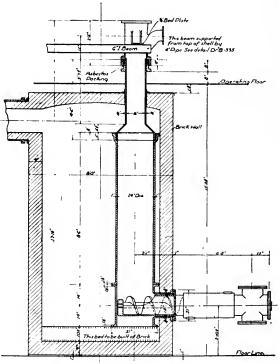
August, 3.91 tons; September, 10.01 tons; October, 16.05 tons; November, 20.17 tons; December, 29.6 tons.

The daily capacity of the plant at the time of shutdown was 45 tons of charcoal.

An accompanying illustration shows a map of the State of California and the localities therein from which the raw materials were obtained. The 1918 fruit crop of California, due to an unusually cool

season and a few unseasonable rainstorms during the summer of 1918, reduced the pit crop from the estimated 30,000 tons to almost one-half that figure. A total of approximate-13,000 tons was shipped to Francisco. A few thousand tons still remained scattered throughout the State, when by

reason of the declaration of an armistice on November 11th, 1918, all purchasing of raw materials was curtailed.



SECTIONAL ELEVATION-24 PIPE IN CARBURETOR 4 PIPE IN SHELL EQUALLY SPACED ON 45 ANGLES

Original assembly of charcoal retort, showing one of the four retort tubes set in place.

Procurement in State of California

Key No. 1, Fresno County—Biola, 279,518 lbs.; Carruthers, 40,240; Clovis, 207,003; Del Rey, 297,389; Fresno, 1,084,692; Fowler, 637,475; Hub, 44,600; Kingsburg, 923,787; Malaga, 176,521; Monmouth, 222,-687; Parlier, 698,619; Reedley, 862,386; Sanger, 561,618; Seima, 1,149,015. Total, 7,185,550 lbs. Key No. 2, Santa Clara County—Campbell, 128,970 lbs.; Los Gatos, 71,060; Mountain View, 74,900; San Jose, 1,495,415; Santa Clara, 705,279; Sunnyvale, 217,991; Vasona, 1,918,320. Total, 4,611,935 lbs. Key No. 3, Kings County—Armona, 957,403 lbs.; Hanford, 1,576,673; Lemoore, 150,275. Total, 2,684,-

Key No. 4, Tulare County—Cutler, 112,733 lbs.; Dinuba, 342,149; Exeter, 151,400; Porterville, 8,300; Sultana, 85,372; Visalia, 688,949. Total, 1,391,903 lbs.
Key No. 5, Alameda County—Hayward, 236,340 lbs.; Fruitvale, 381,160; Lorenzo, 115,140; Oakland, 355,240; San Leandro, 127,340. Total, 1,215,220 lbs.
Key No. 6, Los Angeles County—Lankershim, 161,840 lbs.; Los Angeles, 305,680; Pasadena, 73,780; Pomona, 166,180; San Fernando, 75,980; Van Nuys, 60,258. Total, 843,748 lbs.
Key No. 7, Stanislaus County—Modesto, 383,101 lbs.; Oakdale, 54,020; Turlock, 406,186; Empire, 125,345; Ceres, 48,060. Total, 1,016,712 lbs.

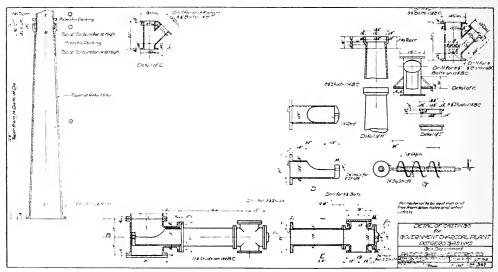


Other illustrations show the storage piles located at the plant. A total of approximately 7,000 tons is seen in these piles.

Accompanying illustrations give a general idea of the condition of the premises and buildings at the Independent Works when that property was commandeered by the Chemical Warfare Service. It was necessary to clear the property, repair and reconstruct the equipment and install additional equipment and apparatus.

In the same group of illustrations just referred to a group of men will be seen working on a railroad trestle. These men A bird's-eye view of the plant as it appeared a few days before the shutdown was ordered will also be found among the illustrations, and also a plan sketch of the plant and its equipment.

The generator of the old water-gas sets was used also as a generator in this work. Producer gas was manufactured therein and this gas served as fuel for heating the retorts. The carburetors were redesigned to serve as retorts. The producer gas from the generators was conducted to a combustion chamber surrounding the tubes in the retorts, and also into this combustion chamber free



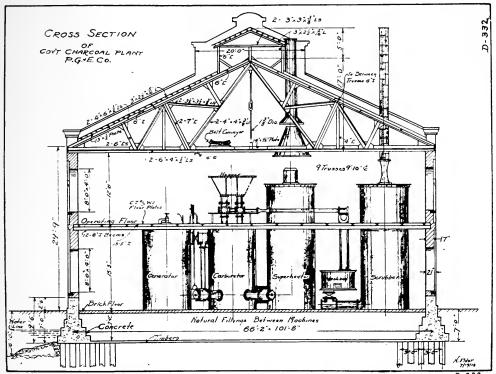
Final design of retorts for carbonizing fruit pits.

are soldiers of Company C, 319th Engineers, Camp Fremont, which organization constructed the railroad spur and trestle for the plant. This spur was of such capacity that twelve railroad cars per day could be handled at the plant.

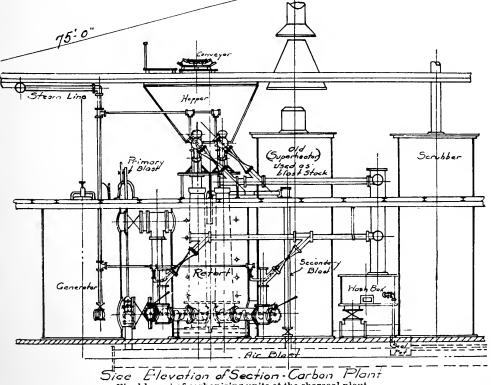
Other illustrations represent the original detail of the retorts and a complete layout of the carbonizing units according to the original design as constructed from the old water-gas sets.

Still another set of illustrations show the final design and layout of these units. Reference to these pictures will present the changes that were made in the original design. air was blown for the combustion of the producer gas. The sensible heat of the producer gas was sufficient to ignite it when in contact with the air blast. The waste combustion gases were led out through a tunnel in the bottom of the retort and up through the superheater, which was therefore utilized merely as a stack.

The distillation products from the carbonization of the pits were carried off by means of steam siphons into the washbox and upwards through the scrubber. Both these pieces of apparatus removed all the tar and liquor from the hot distillation gases and, consequently,



Original layout of carbonizing units at the charcoal plant.

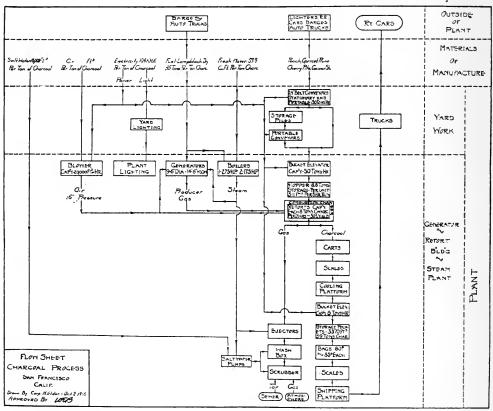


Final layout of carbonizing units at the charcoal plant.

only the permanent gases were discharged into the atmosphere. Developments were under way for the utilization of the distillation products as fuel when the plant was shut down by official order.

Reference to the flow sheet of the process will give a complete picture of the operations carried out at the plant.

The raw materials were brought into the plant either over the wharf on the terials onto another stationary conveyor of the same capacity, distributing the pits to the storage hoppers above the carbonizing units, or to the portable conveyor system which enabled the operators to store the materials on any desired section of the property. The former route was the usual practice at the plant, the storage piles being utilized merely as reserve. When it was necessary to with-



Flow sheet of charcoal process, showing operations and materials of manufacture.

southern boundary of the property, or over the railroad spur on the northern boundary. Only a small percentage of these raw materials was received via the water route.

From the railroad cars the fruit pits were discharged by hand labor over screens to remove dirt, gravel, etc., onto a belt conveyor having a carrying capacity of 50 tons per hour, which conveyor carried the pits either to the bucket elevator which discharged the raw ma-

draw pits from the storage piles, the portable conveyors were reversed, delivering the pits to the stationary conveyor system and then into the building.

The fuel utilized at the plant, both for the manufacture of producer gas and for the generation of steam in the boiler plant, was the by-product lampblack from the Potrero Works of the Pacific Gas and Electric Company. About 0.30 ton of lampblack was used for the manufacture of producer gas per ton of charcoal



Railroad spur built in by Company C, 319th Engineers, U. S. A.

produced and approximately half that quantity per ton of charcoal was required for the generation of steam.

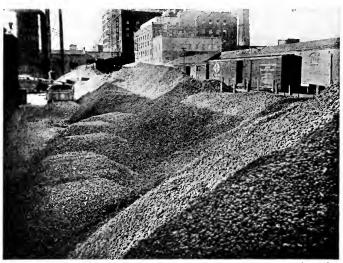
In starting up a carbonizing unit a strong fire of lampblack was made in the generators. When the fire bed, which was usually four and one-half to five feet in depth, was of sufficiently even temperature throughout, steam was introduced under it and the resulting producer gas was conducted through over to the retorts.

During the blasting operation the waste gases were carried over also to the retorts and the sensible heat of these combustion gases was sufficient to heat up the fire-brick lining of the retort chamber. When a point was reached, as judged by the operator, where the temperature of the retort chamber walls was sufficient to ignite the producer gas, the

air blast was introduced. Combustion would then take place and the heating gases following a downdraft would bring the castiron retorts up to carbonizing temperature. The temperature usually carried under normal operating conditions varied from 825° C. to 850° C. This temperature was determined by means of a Leeds & Northrup optical pyrometer, peep-holes being provided in the side of the retort shell. The operating temperature was read at some point along the length of the retorts which had been determined by research as being the point of maximum temperature in the furnace. The variation in temperature from the top of the retorts to the bottom was rarely more than 50 centigrade degrees. It will thus be seen that a fairly even temperature was maintained throughout the whole retort chamber.

This attainment of an even temperature was the deciding factor in utilizing the downdraft system of heating rather than an updraft system.

The fruit pits, after having been fed into the storage hoppers above the carbonizing units by the belt conveyor system, fell by gravity into the retort chamber. When the carbonizing of the green material that originally was in the tubes was complete, as determined by withdrawing some of the material, the process men would operate the worm conveyors at the discharge end of the retorts by means of levers which were geared up to the worm conveyor. The usual schedule in operating these worm conveyors was to make one complete revolution every four minutes. At times, due to the unusual wetness of the pits or other variations in the class of raw material handled, this withdrawing schedule



Inside storage pile of peach pits waiting to be used. Approximately 500 tons.

had to be varied. The following table shows the relation between the discharge schedule, the time of carbonization, the yield of charcoal produced and the total tonnage per unit of four tubes each per twenty-four hours:

Minutes per revolution	Duration of carbonization in hours	Per cent yield	Production in tons per unit per 24 hours
3	3.0	.32.0	12.5
4	4.25	30.0	9.0
6	5.5	26.0	5.7
8	7.0	21.5	4.1

In discussion of the yield obtained it must not be thought that a low yield indicated poor operation, unless that yield dropped below 20 per cent. At the operating temperature established at this plant, a yield of 20 per cent indicated complete carbonization.

A higher yield than that meant that the charcoal still retained some volatile material, and the class of charcoal required for gas defense purposes was one of absolute purity, i. e., almost chemically pure carbon. At the San Francisco plant, however, it was not necessary to reduce the fruit pits completely, as the prime considerations were saving in transportation and large volume production. It was determined that considering the reduced capacity of a unit when that unit was operated at a 20 per cent yield, the most economical operation was to carbonize down to approximately a 30 per cent vield.

As the material was withdrawn from the retorts it was caught in wheelbarrows, weighed, dumped on a concrete with provided floor draining facilities and sprayed with water. The charcoal would then stand on this floor for twenty-four to fortyeight hours to permit it to dry and to observe any dangers of spontaneous combustion, etc. would then be elevated by means of a bucket elevator to the storage hoppers. The charcoal remained in these storage hoppers for a number of days, and regular temperature measurements were taken on these hoppers, also, again to observe the possibilities of spontaneous combustion. When the operators decided that the charcoal was ready for shipment, the product was sacked directly through chutes at the foot of the hoppers, weighed, loaded on motor trucks and delivered to the railroad siding.

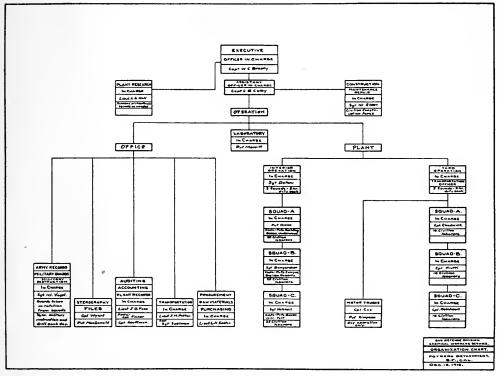
Accompanying illustrations show railroad cars in the process of unloading, the belt conveyor that distributed the raw materials to the storage hoppers, an upper view of three of the carbonizing units, a lower view of these units indicating the method of withdrawing the product from the retorts, the shipping platform and the boilers.

The operations at the plant were carried out under the direction of the military authorities. All construction, operation and maintenance labor was supplied by the Pacific Gas and Electric Company, and this labor operated directly under the supervision of the army officials.

The organization of the detachment of the Chemical Warfare Service under which the work was performed is given in an accompanying chart and an illus-



Outside storage pile of peach pits. Approximately 4000 tons in view.



Organization chart of Chemical Warfare Service detachment at the Potrero charcoal plant.

tration shows the military personnel of the detachment.

After the charcoal left the San Francisco plant it was transported to the New York plant of the Chemical Warfare Service at Astoria, Long Island. Here the Western product was ground, screened to definite size and then submitted to a specially designed warm air and steam treatment for the purpose of removing the last traces of volatile material, thus opening up all the pores of the charcoal.

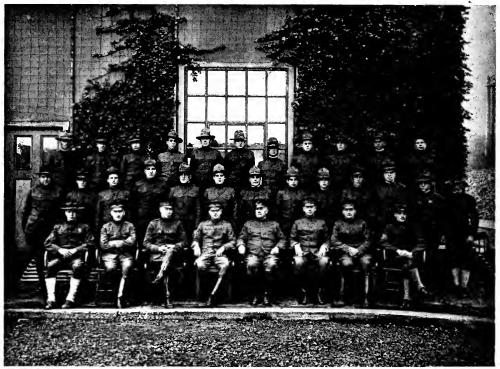
gas"), an d

Another outside pile. About 1000 tons.

The product from this treatment was submitted an evaluation test against the poisonous gases actually used on the battlefront. Some of the gases used at Astoria were chlorine, phosgene, chlorpicrin, diethyldichlorsulphide ("m u s tard gas"), ethyl-iodoacetate ("tear gas"), benzyl-bromide ("tear trichlormethylchloroformate, arsine dichlor - phenyl arsine. These gases were employed in the usual

routine at Astoria, but as advices would come from headquarters, the efficiency of the chemical products against other and new gases would have to be determined. An interesting commentary on this work is that very often only a few days would elapse between the introduction of a new gas at the theatre of operations and the variation in the American chemical processes to improve or vary the quality of the gas defense chemicals in order that they and pleased the New York headquarters of the Chemical Warfare Service. Such attainment is an excellent record for the Pacific Gas and Electric Company, and comments most satisfactorily upon the capacity, efficiency and co-operation of all departments of the company that were engaged at some time or other on the Government work.

Worthy of special mention in this connection are Messrs. E. C. and L. B. Jones



Personnel of the Chemical Warfare Service detachment located at the Potrero Gas Works of the Pacific Gas and Electric Company, San Francisco, from June, 1918, to February, 1919.

might effectively meet the new conditions. This rapidity of variation in the processes required a highly skilled technical staff as well as extensive apparatus and equipment.

Just prior to the time of the signing of the armistice, the San Francisco plant had become the most important source of charcoal for American gas defense. The rapidity with which the San Francisco plant was placed in operating condition, the economy of the process and of the installation and the general ease of getting things done in San Francisco surprised and Mr. W. S. Yard, who gave unstintingly of their time and energy in the effort to place the San Francisco plant on a sound operating basis.

The generosity, counsel and advice of Mr. John A. Britton and Mr. A. F. Hockenbeamer will always command the deepest gratitude of the military authorities who were associated with this work.

The combined successful efforts of the Chemical Warfare Service and the Pacific Gas and Electric Company form another record of American engineering ingenuity.

Coast Section of the N. E. L. A. to Hold Victory Convention

The third annual convention of Pacific Coast Section, National Electric Light Association, will be held April 30th to May 2d, inclusive, at the Hotel del Coronado, Coronado Beach, California.

A large attendance is already assured, not only because of the intense interest of members in the papers and discussions to be presented at this Victory Convention, but also because of the fact that the quarterly meetings of the California Association of Electrical Contractors and Dealers and the Pacific Coast Electrical Supply Jobbers' Association are to be held at the same time and place. The Westinghouse Agent Jobbers' Association will also schedule a special train from Chicago, so that its members may attend this meeting prior to their own annual gathering at Del Monte, May 4-11.

All papers will be printed in the Journal of Electricity of April 15, 1919, a copy of which will be mailed to members in ample time to prepare discussion. No papers will be read at the meeting, so as to allow full opportunity for discussion. A. W. Childs, chairman of the Commercial Committee, announces the following prelim-

inary list of papers:

"The Proper Training of the Sales Personnel," Lee H. Newbert, I. W. Alexander and J. F. Pollard.

"The Contractors-Dealers of Tomorrow," John C. Rendler.

"The Jobbers' Relation to the Indus-

try," W. S. Berry. "Means for Establishing Closer Relations Between the Architects and the Electrical Industry," J. O. Case.

"Interesting the Consumer,"

Simpson.

"Progress of Electric Cooking and

Heating," B. M. Maddox.

"Wiring for Heavy Wattage Appliances," author to be announced later.

H. A. Barre, chairman of the Engineering Committee, has arranged for the following papers, to which others will be added subsequently:

"Protective Relays on Main Transmission Lines," by George E. Armstrong.

"Some Minor Aspects of Interconnected Systems," by L. M. Klauber.

"The San Joaquin-Edison Interconnec-

tion," by G. R. Kenny.
"Development of Small Automatic Power Plants," by E. A. Quinn.

H. H. Jones, manager of the San Diego Consolidated Gas and Electric Company, will act as chairman of the General Convention Committee, and Mr. William Clayton of the United Light, Fuel and Power Company of San Diego will be This committee has vice-chairman. charge of all convention arrangements and is made up of the chairmen of the various subcommittees, each of whom will appoint his own committee to handle Chairman Jones has anthe work. nounced the personnel of his subcommittee chairmen as follows:

Papers—J. B. Black, Great Western

Power Company, San Francisco.

Registration and Hotel-A. E. Holloway, San Diego Consolidated Gas and Electric Company.

Transportation-W. M. Deming, Journal

of Electricity.

Reception-William Clayton, United Light, Fuel and Power Company, San Diego.

Entertainment-K. E. Van Kuran, Westinghouse Electric and Manufacturing Company.

Publicity, Printing and Meeting—A. H. Halloran, Journal of Electricity.

Outdoor Sports—G. H. P. Dellman, General Electric Company.

Banquet—T. E. Bibbins, Pacific States Electric Company.

Ladies' Entertainment—W. L. Frost, Southern California Edison Company.

Finance-J. F. Pollard, Sierra and San Francisco Power Company.

Auditing—B. B. Stith, Western States Gas and Electric Company.

W. M. Deming, master of transportation, in conjunction with A. E. Holloway. chairman of the Registration and Hotel Committee, will soon send out a circular giving rates and accommodations schedule. The Pacific Steamship Company's S. S. "President" will leave San Francisco at noon on April 28th, arriving at Los Angeles at noon the following day, whence the Santa Fe may be taken to San There is also a possibility that Mr. Deming will prevail upon the Federal Railroad Administration to put special convention rates in effect on the railroads. Many members are planning to drive their automobiles to San Diego.

WELFARE

[Reprinted from "Now and Then," the Business and Professiona . Women's Club Magazine, Issue of February, 1919.]

THERE are many varied ideas as to what can be properly designated as "Welfare Work," and there are just as many as to its desirability or undesirability. Unfortunately, in this instance there is a lot in a name, for the joking designation of "Welfare" as "Helfare" has stuck and started a feeling of unrest and irritation.

Theory is one of the most beautiful things we know of; in fact, it is made of the fabric of dreams—it is the dreams of men planned out on what they firmly believe to be a practical basis. The theorist argues with himself and satisfactorily answers his own arguments; but unfortunately he cannot discern all the cogs and mechanism of that portion of the motive power classed as the human equation, and hence his ship of Theory is all too often wrecked or disabled on the sunken reefs of Practice. For instance—

System—A wonderful conception and something vitally necessary to the proper handling of any business. But so-called system experts have been its most deadly enemy; it has been impossible for them to understand that the basic principle of System is common sense. Mad with an idea they have ignored the fact that a system to be successful must be made to fit a business, and not a business fitted to a system. That multiplication of work and checking is not System, but an abomination.

Some one discovered the advantages in the elimination of useless movements and proper preparation for work, and Efficiency was born. Specialists in this theory sprang up like toadstools, factories, offices, stores fell before the mad rush of the Efficiency Experts, until what was welcomed at first soon became a menace, for like all other theorists Efficiency Experts went to extremes, each one apparently endeavoring to outdo the other in destroying individuality and loyalty by making machines out of human beings. Thus they destroyed Efficiency, for upon individuality and loyalty alone can true efficiency be based.

At one time men and women were expected to work in unsanitary, poorly equipped and miserable surroundings; classed in the category of machines, driven to the limit and thrown aside when worn out. The cheapest kind of machinery, for so they figured through lack of knowledge in figuring cost, based on the assumption that replacement cost nothing. Then someone discovered the value of conservation of human energy, modern equipment and sanitary surroundings, and the gate to "Welfare" was open.

Proper accommodations—by this we mean well lighted, well ventilated, properly equipped premises; rest rooms, lunch rooms where needed; supervision in the hands of clear thinking, capable men and women—not drivers, cranks or grouches who get drunk on a semblance of authority—all these should be part of the program of every representative business concern, for they represent a powerful asset. But—be very, very careful, do not cross the line into paternalism, for it is there that "Helfare" looms. In other words, the Theory is O. K., will it share the fate of System and Efficiency through lack of judgment?



Our"Pacific Service"Employees Association



The season's activities which had been so successfully inaugurated in San Francisco in the early part of February were carried on with the meeting in Oakland on the evening of February 25th. Ebell Hall was full to overflowing with an audience that appreciated every item upon a

well-chosen program.

The star speaker of the occasion was Captain A. E. Graupner of the gallant 91st Division, who was mentioned in dispatches from the front for particular gallantry in action and in the fighting of Argonne Forest received a wound from which he is only now slowly recovering. Captain Graupner was a former judge in the Superior Court in San Francisco, and since his return from the war has earned fame by a series of masterly articles for a local newspaper. His talk, therefore, was that of one having knowledge of men and things, and, needless to say, proved intensely interesting.

Captain Graupner talked of the fighting at Chateau Thierry and in the Argonne Forest as the decisive period of the war when, for the first time, there was evidence of a complete breakdown of morale in the German army. The first evidence of the break, he said, was obtained from German prisoners, so well had the enemy

concealed its true condition.

It was, in a sense, an experiment so far as the American troops were concerned, that advance which cleaned out the Boches. The question to be answered was: Will raw troops do under fire as well as they did in the training camp? The unequivocal answer came back: Yes, they did it.

One or two points in Captain Graupner's address are deserving of especial mention. The speaker gave direct contradiction to the charges of Governor Allen of Kansas concerning the failure of artillery to back up the 35th Division at the front. Captain Graupner told us that there was no word of truth in the charge; that, on the contrary, the division in question was well backed by artillery fire. Another point made by Captain Graupner concerned the nurses at the front. There was more than emphasis in the captain's remarks:

"If any man meets a nurse that labored at a base hospital at the front, let him take his hat off to her and bend the knee in humble reverence."

Taking the American Army as a whole, Captain Graupner said that it had won, as had the other armies of the allied nations, in spite of its mistakes. One thing to be remembered, he thought, was that every mistake committed on the other side had started at home. "We sat in our grandeur for three long years and made no preparation; there you have the thing in a nutshell." But he thought that the boys in the American Army who were fortunate enough to get back safe and sound were healthier, better and cleaner for the experience. All's well that ends well.

Another feature of the evening's entertainment was the appearance of Mr. Fred Emerson Brooks, the California poet, in a number of clever recitations, prominent among which were "Old Glory," "Old Ace" and "The California Flea." Brooks is a clever story teller as well as a writer, and he made a big hit with his audience. This Oakland meeting was the occasion of the first appearance of the Pacific Service Women's Chorus, and from its initial tryout it is safe to predict great things for the future. The solo stars of this particular evening were Miss Agnes Buckingham and Mr. Clarence Oliver. Mr. and Mrs. Lowell Redfield were on hand, as usual, to direct the vocal entertainment.

Captain W. E. Brophy of the Chemical Warfare Service, United States Army, addressed the San Francisco meeting of the Association at Elks' Hall on the evening of February 11th on the subject of "American Gas Defense." For the past year Captain Brophy and the detachment under his command have been stationed at the Potrero, where the old Independent gas plant was converted into a factory for the manufacture of charcoal from fruit pits.

"It was the only plant of its kind located west of the Missouri River," said Captain Brophy. "It cost \$105,000, but by manufacturing the charcoal on the

premises we saved \$250,000 in transportation, so we may reasonably say it was worth while. Furthermore, this charcoal manufacture was the first continuous process of the kind ever successfully operated in this country. And it helped in the manufacture of what turned out to be the best and most enduring gasmasks worn by the soldiers of any of the nations engaged in the great war."

A full account of Captain Brophy's industry will be found elsewhere in this

issue of the magazine.

Other features of entertainment during the evening included vocal selections by the Pacific Service Women's Chorus, led by Lowell Redfield; recitations by Fred Emerson Brooks; an adding machine contest, a test of speed and accuracy, won by Mrs. Peters of the San Francisco District; an address by Robert Eltringham, electrical engineer for the Industrial Accident Commission, upon the proposed master electricians' law now before the State Legislature in Sacramento. With regard to the Pacific Service Chorus, Miss Wismer of the San Francisco District was the soloist and charmed a large audience.

According to established custom, the proceedings terminated with a dance.

From our Association's executive committee comes the welcome announcement that the management has approved the assignment of five rooms on the sixth floor of the company's office building at 445 Sutter Street, San Francisco, for use by members of the "Pacific Service" Employees' Association as a headquarters.

The rooms are quite commodious. Two are exceptionally large; one will be used as a library for men and women, while the other will be converted into a lounging room for men. This arrangement will settle the question of permanent head-quarters for the time being. One of the desirable features about a headquarters for members of the "Pacific Service" Employees' Association is proximity to the place of occupation, and while one or two suggested sites have been discussed by the executive committee nothing quite so satisfactory as the present arrangement received very serious consideration.

The arrangement of the rooms is in charge of our property agent, Mr. R. J. Cantrell, who is already at work. The establishment of a "Pacific Service" Club in this way will be in the very best interests of the men and women employees, bringing them together in a spirit of com-

radeship which is not possible in the ordinary routine of their work or in the monthly meetings which are in the nature of an evening's entertainment.

At a recent meeting of the executive committee of the Association the educational committee was authorized to publish a monthly bulletin as a means of promoting educational work. The main feature of this will be a question box, and Chairman W. M. Henderson hopes that enough interest will be taken in this to make it really worth while.

This monthly bulletin, of course, is entirely outside of Pacific Service Magazine, which will continue to give a generous amount of space to the Association, its membership and its development.

To those interested in the technical side of "Pacific Service" it is interesting to note that Mr. J. P. Jollyman, chairman of the speakers' committee, has arranged the spring schedule of speakers for our meetings in San Francisco, Oakland and elsewhere, through whose contributions he expects to establish in the minds of our Association membership a proper understanding of the different problems that the various engineering departments are confronted with and have to solve in the ordinary routine of their business.

On the question of membership it is with great delight that we report that the intensive campaign carried on since January 1st under the leadership of Mr. R. E. Crossman resulted in the addition of 307 new members to our roll.

Two electrical courses of interest to the employees of "Pacific Service" have been launched by the Extension Division of the University of California. a series of evening lectures and laboratory experiments conducted at the Polytechnic High School, San Francisco, throughout the rest of the year except for the summer vacation. It takes up the fundamentals of electricity, including a study of direct current circuits and ma-All interested are cordially inchines. vited to visit the class at their first opportunity and meet the instructor, Mr. A. L. Jordan, who has built a wonderful science department in this school during the years which he has been its head.

A new correspondence course in electricity is to be issued in conjunction with the *Journal of Electricity*. This course

will also take up simple circuits, power calculations, wire calculations, electromagnets, electrolysis, lamps and their illumination. There will be a series of fifteen articles in the Journal of Electricity, supplemented by complete correspondence course issued from the university. Full particulars in regard to either course may be obtained by addressing the Extension Division of the University of California, Berkeley.

OF SPECIAL INTEREST TO WOMEN MEMBERS.

The gymnasium and swimming class at the Young Women's Christian Association building, Sutter and Mason Streets, for the women members of the "Pacific Service" Employees' Association opened on Monday evening, March 10th, with

some eighty in attendance.

membership has been This class arranged for by the committee on Women's Affairs, and the dues in the Y. W. C. A. are paid out of the funds of the Association. All women employees of the company are urged to join the class, all that is necessary being a membership in the "Pacific Service" Employees' Association, which carries with it the privilege of joining the class and receiving instruction in gymnasium work and swimming every Monday evening from five until seven.

During the hour between five and six o'clock the class receives instruction in the art of physical culture, which is made interesting and attractive by the teacher in charge of the work that a great deal of enjoyment as well as beneficial results is found in this healthful form of exercise. At six o'clock the class goes into the pool for instruction in swimming. Here also a competent teacher is in charge for beginners, while those who are already able to swim are at liberty to sport around in the water as they wish.

BASKET BALL TOURNAMENT.

The Association's basketball tournament made a good start on Saturday evening, March 8th, games being played at San Rafael, Oakland and Marysville. games were hotly contested and closer

than the scores would indicate.

The San Francisco District team journeved to San Rafael to engage the Marin quintet, whom they defeated by a score of 47 to 18. After the game, which was staged at the Garden Rink, a dance was held and enjoyed by all present. Berts, Dukell and Citron showed up well for the

winners, while Andrade was Marin District's best point winner.

At Oakland the Alameda County team was host at Plymouth Center Gymnasium to the team from San Jose and suffered a defeat. The boys from the prune belt were in good condition and romped away with the long end of a 22 to 9 score. The Oakland boys are capable of doing better, and before the tournament is concluded will get into their stride. Silverstein of the winning team and Mann of Alameda County were the chief point winners.

The San Joaquin District team did not do as well as the other traveling teams; the Marysville team let them have the short end of a 28 to 6 score. Although defeated, they enjoyed their trip immensely, as Mr. Ed Johnson, our genial manager at Marysville, treated them to a very good time. After the game a dance, at which refreshments were served, was enjoyed, and on Sunday morning an automobile inspection trip to Harmonton to the large gold dredgers was featured. The Stockton boys all agreed in voting their trip a big succes, barring their showing in the game. They also will be heard from later in the tournament.

On Saturday, March 15th, the Marin District team defeated the Marysville quintet on the latter team's own court by a score of 18 to 12. The game was closely contested, the score at half time being a tie, 10-10. In the last half the San Rafael boys' teamwork overcame their opponents' advantage in weight and, as a consequence, they annexed the long end of the score. The game was witnessed by a crowd that taxed the capacity of the hall and the S. R. O. sign had to be hung out. Kraft and Manning for the winners and Johnson and Anderson for the losers were the stars of the game.

The game between the San Joaquin and Alameda County Districts, which was to have been staged at Stockton, was postponed owing to the sudden death of Mr. W. E. Smith, one of the Stockton players. The members of the Association and all participants in the league desire to express in this column to the members of Mr. Smith's family their sincere sympathy.

The standing of the teams to date is as follows:

Team	Won.	Lost.	Percentage.
San Francisco	1	0	1.000
San Jose	1	0	1.000
Marysville	1	1	.500
Marin		1	.500
Alameda County	0	1	.000
San Joaquin	0	1	.000

News From Our Boys Now in the Service of the United States

[Gathered by the Honor Roll Committee.]

Mr. Britton is in receipt of a letter from Private Charles Queirolo of Company E, 316th Supply Train, from Le Theil, France, accompanied by the picture which appears on this page:

"I am sending you a picture of the truck that went through the world war without being hit by a shell. It is a three-ton Packard truck, but many time we have pulled five tons with it. The fellow who is standing at the front wheel is myself, and the one standing beside the truck is my partner, who is from 'Frisco also. Besides ourselves, there is a picture of an owl on the side of the truck. Every truck in the 316th Supply Train has one on. It represents how we used to drive at night without lights, hauling rations up to the front for the infantry. Believe me, a fellow needed owl's eyes to drive through shellholes and mud, for the roads were something awful, especially up near the front where the shells came rolling by. I consider myself lucky getting out of this war without a scratch.

"I suppose the 91st Division is coming back to the States soon, and we are all willing to get back to dear old 'Frisco. I have seen all I wanted of France and Belgium; there's nothing like California for me. I received your postal card stating that there will be no more magazines sent to troops on account of the movement, and I wish to thank you for all the magazines received in the past, for I sure did appreciate them, especially

when I saw some of the photos of our soldiers in them."

Captain K. R. Varney, deceased, 301st Battalion, Tank Corps, has been awarded the Distinguished Service Cross:

"For extraordinary heroism in action near Ronssoy, France, September 29, 1918. When a dense fog and a smoke barrage had made visibility so poor that it was difficult to get his tanks into action, Captain Varney personally led his machines on foot several hundred yards in advance of the first wave of infantry in the face of deadly artillery and machine-gun fire. He thus enabled his tanks to maintain their direction and cleared a path for the infantry, but in accomplishing this heroic task he was killed."

Extracts from letter from Sergeant Edward G. Haughy, Battery C, 17th F. A., Germany: Yes, I sure saw the finish of "Fritz," and, believe me, I won't forget it in a hurry, either, for at the ninth hour "Fritz" started a barrage which kept up for an hour and a half, sweeping from right to left of our outfit and cleaning D Battery's picket line of twenty-one horses, but, fortunately, no men. On this day I met with the only close call I have had in action since I have been here,

which has been months, and in time I have been on fourteen different fronts, so sure have seen some service. I do not call a shell that lands twenty or thirty yards away a close call, for I have had three like that. My experience was having my horse, the only pal I have had since landing "over here," hit by a piece of shell which killed him. I was thrown about fifteen feet from him. I lost no time being on my



Private Charles Queirolo (at front wheel), Company E, 316th Supply Train. (Formerly of San Francisco Supply District.)

way, for "Fritz" had the range of the road and was giving it h-

The following is an extract from General Orders. Second Division, of which Sergeant Haughy is a member:

The Second Division played a great military and historic importance in this tremendous engagement. It fought five battles, or series of battles, always defeating the enemy, and it has won the right to have inscribed on its banner the names of the brilliant victories won by it at Chateau Thierry, Soissons, St. Mihiel Salient, Mont Blanc and the Argonne Meuse. The officers and men of this division have

earned by their valor, their skill and their victories, the admiration and gratitude of

our allies and our countrymen.

Sergeant F. E. Anderson, formerly of Solano District, wrote the following letter under date of January 29th to Mr. Sedgwick:

Still holding down my "government job" here in France, but am afraid they are not getting very good returns from my work for the last few months, as I received a "luger" bullet in the leg and have been in the hospital ever since. am all well now, and expect to be on my way towards the good old U. S. A. very soon, as I will not be sent back into service.

The commercial phone system in France is certainly a card. One must be more of a steeplejack than a lineman, especially in large towns. There, if you wish to do any line work, you must apply to every other house over which the lines pass and ask the madame's permission to get on her roof. After groping through the dark and getting tied up in cobwebs and dirt you finally reach your objective, and you find a big channel iron structure and if a tile don't slide off the roof with you, or the whole roof go through, you probably will pull out safely, provided you haven't entered the house with muddy feet. Such is life in France.

First Lieutenant Garrison F. Shields of the Motor Transport Corps has had some



William J. Pippey, Third-Class Electrician, U. S. N. R., San Pedro, Cal. (Formerly of San Francisco District.)

interesting experiences right here in the United States. He writes to Mr. Jack Varney as follows:

I have convoyed overland approximately 3500 trucks of all types and makes, and it is very interesting work. I have made six trips to Baltimore and four trips to New York from Chicago. We started out with probably two hundred trucks divided into five companies of forty trucks each, the companies traveling about thirty miles apart. I have to keep ahead of the outfit and provide sleeping quarters, oil and gasoline, and stay at least a day with each company on the road. I can visit from three to four companies per day and still

not drive over 120 miles at the most. It was pleasant enough during the summer, but now as winter is drawing on it is going to be tough work to buck the snowdrifts over the mountains. I have visited quite a number of power plants here in the East and none of them look as good as our own, and I don't forget to tell them about it, either, so "Pacific Service" is pretty well advertised all along the convoy route.

The above letter was written December 14th and enclosed was a newspaper clipping from an Eastern paper, under date

of May 6th:

The first train of thirty of the 10,000 army transport trucks, the new Liberty trucks, that will pass through Indianapolis on their way to an Eastern seaport, reached the city last night. The trucks parked around the State House. Captain William M. Boylan and Lieutenant S. W. Cousley of the 105th Supply Train, Company A, and Lieutenant G. F. Shields of the motor convoy service, were in charge of the train. The transports will be shipped to France. They are of the standardized Liberty truck designs. The soldiers sleep in the trucks and carry their stoves and food supplies with them. The trip to Indianapolis was marked by three accidents but none was serious. Twice a truck went into a ditch, and in Remington one truck smashed into one in front of it causing a delay of several hours. The entire trip to the seacoast is expected to take fifteen days.

Lieutenant J. L. Fulton, formerly of the Redwood District, has returned to California, having been mustered out of the service. Lieutenant Fulton has been in charge of the Infantry Replacement and Training Camp at Camp Pike, Ark.

Sergeant L. E. Sampson, formerly of the Redwood District, has been mustered out of the service. He enlisted at the outbreak of the war and was stationed at Wilbur Wright Field, Dayton, Ohio, where he made a splendid record in the aviation section of the Army.

J. E. Traxler, from the Alameda County District, who is on Y. M. C. A. service

in France, seems to have had an opportunity to review French history in some detail:

Of course, there are all sorts of interesting things in Paris. In the Palace at Versailles I went through bedrooms and throne rooms, costly halls where Louis XIV, XV and XVI with their wives and friends lived, slept and danced, to say nothing of Napoleon, Louis Philippe and Napoleon III. The guide became quite eloquent when he came to the spot where Bill's father was proclaimed Emperor of Germany. He said that the Germans will be brought to this same spot and there forced to sign the Allies' peace terms. I think that will be rubbing it in in pretty good shape. The Louvre was closed, all the paintings having been removed. have been doing some sightseeing here in Bordeaux today. Saw the remains of an old Roman circus built about 250 A. D., a museum and the picture gallery which has some very beautiful paintings and statuary. Also a cathedral built in the eleventh century. These old churches are very massive and religious looking, but not very cheerful.

I find the streets so narrow and crooked that it seems to me that line building is out of the question, and underground seems to be the only hope. The cities are all very poorly lighted compared to American cities. The lights are for the most part ordinary gas lamps, and frequently many of them are not burning. In Tours if one is out after 9 p. m. he goes



F. A. Johnson, B Company, 37th Engineers, A. E. F. (Formerly of Marysville District.)

home absolutely in the dark unless he uses a flashlight.

F. L. Mix of the Solano District has returned from overseas. Mr. Mix went through five campaigns, including the Chateau Thierry drive, and was seriously wounded in action at the beginning of the Argonne offensive, receiving a head wound from a high explosive shell. We are happy to report, however, that he has finally recovered from these wounds and, as above noted, is again on the job in the company service.

Captain Francis I. Maslin writes from Chamonix, France, that he is having a splendid time while on

leave, skiing on the snow-covered sides of Mont. Blanc.

The following letter was written by Vincent Pilcovich, formerly of Alameda County District. It is dated Nickenich, Germany, February 21, 1919, and after narrating his experiences from the time they landed at Bordeaux to do military police duty he states that his division got into severe fighting on July 14th at Cans, where they lost over 5,000 men but forced the Germans back over fifteen kilometers. Upon being relieved July 29th they returned to their rest area, crossing over the Marne on the pontoon bridge built by the 6th Engineers: "The 4th Infantry Band, or rather what was left of it, played while we crossed the Marne for the second time, and, believe me, it made us feel fine, although we were all so tired that we could hardly move. After almost a month of training we were sent to St. Mihiel to help wipe out that salient. From there we went to the Verdun front and took an active part in the Meuse-Argonne fighting. We were on the front lines continually for twenty-eight days and made an advance of twenty-six kilometers. Here again we lost heavily, but our losses were not made in vain. We made the enemy pay with interest." He goes on to state that the scenery along the Rhine is very beautiful.

The Financial Side of "Pacific Service"

ONE of the standards used by investment bankers in determining the desirability of public utility bonds is the relationship of funded debt to gross revenue. In general, it may be said that an issue of bonds has a good investment standing where the amount of funded debt outstanding does not exceed five times the gross earnings. The excellent and increasingly strong position of Pacific Gas and Electric Company bonds, judged by this criterion, is emphasized by the following table, showing that in the five years ended December 31st, 1918, funded debt outstanding in the hands of the public decreased from 4.75 times to 3.61 times the gross operating revenue. The ratio of total capitalization (including funded debt and preferred and common stock) to gross earnings shows an equally satisfactory decrease. At December 31st, 1913, the Company's entire outstanding capitalization was 7.41 times gross operating revenue, and at the close of 1918 it was only 6.21 times the gross for that year. These figures evidence the conservatism of the Company's financial policy.

	R	ATIO TO GROSS OPE	RATING REVENUE	E OF
Year Ended December 31st	$\begin{array}{c} \textbf{Funded} \\ \textbf{Debt} \end{array}$	Preferred Stock	Common Stock	Total Capitalization Outstanding with Public
1913	4.75	0.63	2.03	7.41
1914	4.43	1.11	1.90	7.45
1915	4.11	1.22	1.84	7.17
1916	4.14	1.29	1.83	7.26
1917	4.01	1.25	1.72	6.98
1918	3.61	1.10	1.50	6.21

STATEMENT OF CONSUMERS BY DEPARTMENTS, AS OF FEBRUARY 28TH

February 28th	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	102,888	43,672	5,313		151,873
1908	123,435	55,588	5,543		184,566
1909	131,267	63,196	5,769		200,232
1910	140,416	71,838	6,388		218,642
1911	154,303	88,575	6,927	4	249,809
1912	178,034	104,203	7,467	124	289,828
1913	195,605	117,661	7,352	225	320,843
1914	208,961	134,263	8,528	297	352,049
1915	222,036	152,247	9,043	353	383,679
1916	227,090	167,284	9,398	385	404,157
1917	233,736	180,626	9,845	407	424,614
1918	244,745	196,617	12,834	454	454,650
1919	256,577	211,340	12,664	466	481,047
n in 12 years	153,689	167,668	7,351	466	329,174

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYERS OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - - EDITOB-IN-CHIEF FREDERICK S. MYRTLE - MANAGING EDITOB A. F. HOCKENBEAMER - - BUSINESS MANAGER Issued the middle of each month

Published by the
PACIFIC GAS AND ELECTRIC COMPANY
at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

MARCH, 1919

No. 10

EDITORIAL

The conference of governors and mayors of the country held at the White House, Washington, D. C., during the first week in March adopted, among other measures, an important resolution recognizing conditions confronting the public utilities, in general, and the street railway companies, in particular. The full text of the resolution, which was adopted by a unanimous vote, follows:

The attention of the conference has been called to conditions existing in many parts of the country with reference to street railway companies. During the war increases in granted to employees pay were through the intervention of the Federal Government. Society recognized that the high cost of living justified this action in the fullest sense. These corporations, however, find themselves bound by certain limitations in the way of franchise contracts with municipalities, and while the operating cost has vastly increased in many instances, the rates of fare have continued without change. This is noticeably true in States where no statutory provision has been made for an appeal to the State Utilities Commission. We disclaim any disposition to trespass on the rights of municipalities, but it is our earnest recommendation that the Federal Government continue its helpful offices with the view to averting serious consequences in the financial affairs of public utilities.

This resolution is the outcome of serious deliberation upon the public utility situation, and at the conference Mr.

Eugene Meyer, Jr., Managing Director of the War Finance Corporation, delivered an address which set forth that situation in no uncertain terms. The War Finance Corporation, as everyone knows, was authorized by Act of Congress in April of last year and got into actual operation the month following. During its term of activity it had contact with numerous industries in almost every part of the country, foremost among which were the public utilities companies whose applications for relief numbered upwards of one hundred. In the course of his address Mr. Meyer emphatically declared his opinion that the public utility problem was one of national importance from a financial and economic point of view, because of its magnitude, and of particular interest to the Labor Department, because it involves the employment of an enormous number of men.

"It represents an investment of thousands of millions of dollars," said Mr. "Its credit has been materially injured. While there have been in the past, no doubt, many examples of mismanagement, and it may be shown in some instances that difficulties are due to over-capitalization, nevertheless I can state from our examination of the cases presented to us there are many cases where the difficulties arise from the economic influences which have been at work during the last four years, namely, constantly rising prices for materials and labor which are necessary for those companies in their operation, combined with the difficulty of making the adjustments, whatever they are, to meet the changed conditions of costs."

Mr. Meyer offered no patent method of solving the problem. He thought it inadvisable for anyone in Washington to seek to impose any solution upon a local territory of a local question. All he asked the conference to do was to recognize the problem as a big one and to call it to the attention of the Administration at the Nation's capital as one worthy of serious consideration. The resolution quoted above was the outcome of the debate, and there the matter rests for the present.

And now comes the quinquennial report of the Bureau of the Census, Department of Commerce, upon the electric railways of the State of California. This report has just been made public and it presents some figures that are worthy of study. The records for California show a decrease in traffic and income for 1917

as compared with 1912, together with increases in operating expenses and other costs, in contrast with large gains for the preceding five-year period of 1907-12. The income from all sources amounted to \$34,419,699, a decrease of 1.2 per cent from the 1912 figure; the operating expenses were \$25,582,252, an increase of 18 per cent over 1912 and 75.5 per cent over 1907, and deductions from income comprising taxes, interest and fixed charges amounted to \$12,660,626, an increase of 18.4 per cent compared with 1912, or 88 per cent over 1907.

It will be seen then that the balance sheet for the five-year period shows an actual deficit of \$3,823,179.

These facts carry their own editorial. They give the answer to all the outpouring of hostile criticism that has met the Railroad Commission of the State of California whenever that body has seen fit to grant an increase of street railroad fare to a private company upon its economic The electric railway is no showing. different from any other industrial enterprise as regards the relation between cost of manufacture and selling price. Where the cost of manufacturing transportation advances, the selling price must also advance if the quality of the commodity is to be maintained. Yet in the case of street railways the popular idea seems to be that the selling price of transportation should remain the same regardless of increases in the cost of manufacture, or any other condition whatsoever. How this idea can be maintained without destroying the street railway industry has never Nothing could show been explained. more clearly than the facts that are here presented the need for a common understanding, to say nothing of co-operation, on the part of the public, the public service commissioners and the operators of public utilities.

The water-power bill concerning which so much has been written and spoken and which in its final shape had the approval of the national administration, passed the House of Representatives only to die peacefully in the United States Senate. This was the end of conferences without number and of hearings attended by prominent men in the water-power industry in all sections of the country. Another Congress will have to take up the fight where it left off, and it means beginning all over again. Meanwhile, it is not pleasant to reflect that eight years have gone by since a single permit has

been granted for water-power development on any navigable stream in the United States. Surely there must some time come relief from this continuous check upon industrial development.

President Wilson last September spoke of the bill as being of capital and immediate importance as a war measure. Upon this statement the San Francisco Bulletin comments as follows:

"How much more important as a peace measure, with the problems of the readjustment of industry confronting us!"

The same paper quotes Senator Jones in the statement that the passage of a water-power measure that would open the streams to use would be the means of immediate employment of one hundred thousand men, the irrigation of immense tracts of arid lands, the investment of \$350,000,000 of private capital and the employment of half a million persons by plants using the power developed. of course, the story of water-power legislation in Congress is one of delay everywhere. This particular bill that went out of sight when Congress adjourned hung fire in conference committee, and when it emerged therefrom it was only to take place among a number of more or less important measures that were lost in the final filibuster. Its demise marks another victory for the so-called conservationists. whose main purpose in life seems to be to scare away all capital that might, under more favorable conditions, find a ready investment.

The prospect certainly is discouraging, but we who are interested in water-power development mean to have another try. Let us hope that the next Congress when it meets in Washington will take up this immense problem in the right kind of progressive spirit, and that from its deliberations something tangible may come to the relief of the water-power industry with consequent benefit to civilization and the West.

Notice to Our Boys in the Army And Navy

You are hereby notified that copies of PACIFIC SERVICE MAGAZINE are being reserved for those of you who desire to complete your files, dating from the time you last received the magazine through the mails.

Arrangements have been made to reserve sufficient copies from subsequent issues for the purpose stated. So, boys, as you return home do not hesitate to send in your applications.

Tidings From Territorial Districts

Alameda County District

Missa edit man: i town watcherman plez oblig print dis. i see one peace u paper u say one missa Jordanie Charlie u call him u say he com San Le an run catch car he much truble dog bark u see mi old woman she vera sic she die last week almost i feel much doctor he say toma poizon old woman she no et toma one year toma much high i sella all i raiza and get mucha mon doctor say toma poizon i no think i feela dat nite vera bad dogs maka much noiz old woman vara sic no lik noiz very late i taka big stick run much i much xcite i wisha u seea missa jordanie him run dogs no katch slow down den he say he say 2 me i tell him i run him in he say he all in he much warm koz doga bark all redv i tell shut up 2 dogs doga mi frenz i calla missa Jordanie em all by front name tell me he advertiz man Oakerlan he no want advertiz San Le an i tell him no fool me com jug he say he dry an he get mucha more warm me he Gas Comp he say me no la lo he senda me big a gass bill i la lo wat for u Charlie do San Le an Ludie tell i gotta he goata and he com see no believe him all bosha pleaz oblig no tell i say he no come see gotta he goata i dunno maybee he com San Le an see chicken

much oblig pleaz

Joe Fetardo.

J. M. Rowe is back at Sta. "C". He is no partner of the famous John Doe. He made his own name at Camp Lewis and Michigan. Proficiency promoted him to Regimental Sergeant Major. His only combat was with cold weather.

Harry R. Jenkins left as a boy and returned physically developed to do any man proud. He was with the 91st New Chateau France.

Harry H. Larson entrained with the engineering corps and in the battle of Argonne Forest became separated. He attached himself to the infantry, got into a German machine gun nest, was

wounded in No Man's Land and had a thrilling experience getting out. He braved the barb wires but is glad to get back to help keep the home wires burning.

Max Duponey of the Gas Meter Repair Department served as truck driver at Fort Sam Houston, Texas. The country was dull and monotonous. He is glad to get back to the gas that is worth measuring.

E. A. Skogland is back to Sta, "B", having served eleven months in the Aerial Squadron at San Diego.

J. J. Streeter was electric troubleman. He wanted more trouble so enlisted, but was rejected on a physical defect. True to duty's call he went to Canada, without any ties with that country, and was accepted. He left with the 102d Light Infantry. He doesn't know why called light, when his pack weighed 76 pounds. He was in active service at Cambrai raiding German machine gun nests and sustained wounds from a gas shell. He has a trophy of a belt from a Prussian Guard. He is again back to work shooting trouble, as the vernacular goes, and sure good shooting.

A. B. Weeks is back from the navy, having served on the good ship Concrete, which is no other than the Navy Pier at San Pedro. P. S. He was not seasick.

Wm. Belford served at the technical school, Navy Dept., Boston, Mass., and is now back at Berkeley District. The most interesting engagement was with the famous Boston baked.

The Pleasanton Times editorially has a message to Garcia headed up thus:

"How to KILL the Town

"See that no corporation or public utility makes a cent of profit and keep all foreign capital out."

Mr. Frank A. Leach, Jr., district manager, was toasted at the Rotary Club, thus:

"Leach—Frank in name and nature—a dispenser of matter in its rarified state,

used for lighting, cooking and empty talk. Also controller of an invisible power 'Watt' rotates the wheels of industry."

The Gas Company enjoys jokes at its own expense. Here is one at first read-

ing:

"Meters do not run faster when pressure is low," says the gas company, supported by a Government expert. So it must have been the meter reader last winter.—Kansas City Star.

Rereading, the joke is less intelligible. Finally only one impression is left, one that is not so generally known and that

the fact of the first sentence.

Bills and a check in payment were received through the mail, but as the maker omitted to sign the check it was returned for signature. The check was sent back duly signed with this acceptable explanation: "Sorry this occurred but we have babies in this house that interrupt us even when we are in the middle of paying our gas bills."

AL. A. MEDA.

Marysville District

The outlook for hops is much better than for many years, and some of the growers are contracting for good prices for three or more years. Several Sutter County hop men have contracted their hops for the next three years. The contract calls for 100,000 pounds of hops each year to be paid for at the rate of 25 cents the first year, 21 cents for the 1920 crop and 20 cents for the 1921 crop. E. W. Hawk and Thomas Coulter contracted with the Wolf Hop Company as above.

C. E. Erikson, Government engineer investigating the probability of a new irrigation project for this county, assures the Marysville Chamber of Commerce that his report to the Government will be

favorable to the plan.

Erikson states that he has found sites along the Yuba River and Dry Creek which will be excellent situations for reservoirs in which to store water. He further added that if co-operation would accomplish anything, the spirit shown by the Chamber of Commerce and other progressive organizations would gain for the county the irrigation.

An addition to the fleet of the largest

gold dredgers in the world was made recently when Dredge No. 18 was launched by the Yuba Manufacturing Company in the Hammonton Gold Fields.

No. 18, which is one of the fleet of six dredgers whose size is not surpassed by any other gold dredger in the world, was built by the Yuba Manufacturing Company under the personal direction of Rod Sargeant, who takes the place of Paul E. Morse at Hammonton. No. 18 was built for the Yuba Consolidated Gold Fields Company.

The launching of No. 18 is said to have been the most successful ever accomplished at Hammonton

plished at Hammonton.

The Rosenberg Brothers & Co. rice mill at Biggs has started a night shift again. This puts the mill on a twenty-four-hour day once more, and it is expected that it will run that way for some time.

The company is now milling out a large order of 50,000 bags for Belgium. This is mixed, three pounds of head green to

one of screenings.

During one week the mill shipped out six cars of cleaned rice to New York.

The extended holdings of the Baker Brothers have been rented to Adams & Lindberg for two years at a rental of \$45 an acre for the two years for rice growing. It consists of over 1000 acres.

The 240 acres of the Boulware estate ranch is rented for rice culture for the coming year. C. M. Boulware will have charge of the property during the year.

G. W. Hill, an orchardist of the Bangor section, picked 400 dozen lemons from two trees in his grove. The fruit grew in clusters, was perfectly formed, of uniform size and of good quality. None of the fruit was harmed by the heavy frosts which prevailed during the latter part of December and the first of January.

The movement for better roads throughout Butte County had a most auspicious beginning in the Superior Court room recently when more than 100 good roads boosters from every section of the county assembled to give support to the movement.

The Swayne Lumber Company is to begin logging operations about the last of this month and the big mill adjacent to Oroville is to resume operations early in April, according to W. H. Swayne, gen-

eral manager of the company.

Swayne states that preparations are being made for a big season and already quite a number of men have been employed who will hold themselves in readiness for the resumption of operations. The mill has been entirely overhauled in the last few months and everything is in readiness for the start.

Sixty acres of the W. H. Dunahoo place west of town is now ready for the coming rice crop. As soon as Dunahoo can prepare ditches for 100 acres more of the place it will be ready for rice.

Everything is in readiness at the plant of the Sunical Packing Company for the spinach pack. Present indications are that the cannery will begin running on spinach about March 20th. Although it is not expected that the State pack will be as large as last year the local cannery will have a much larger pack than a year ago.

The company is now erecting a community cottage at its Sunical camp. Shower baths are being installed there. A laundry will also be built in the cot-

tage.

The plans of the company for the summer include the construction of the new olive oil mill. Work upon the mill will start in the near future.

Rosenberg Brothers & Company will lose no time in getting to work on the new Colusa rice mill. All orders for machinery will be placed this week, and within a month and a half work will begin on the construction of the big \$250,000 plant on the old "China Garden" grounds. City Attorney Thomas Rutledge will prepare the deed from the town to the company. The amount of land given is six and one-half acres.

The deed will be turned over when the plant is built. Mayor Robinson and the town trustees, Messrs. Arnold, O'Rourke, Hicok and Moore, while more than willing to encourage the company in every proper way, thought it well to consult with some of the town's leading men before finally agreeing to make a fee simple deed for the land and called in Attorney U. W. Brown, Attorney I. G. Zumwalt, B. H. Burton, John G. Mogk and M. H. Boggs for a consultation with Messrs. Kattenbrink and Carver, the Rosenberg representatives. The decision

to deed the land was unanimous after the facts were gone over.

E. C. Johnson.

Santa Rosa District

W. C. THOLE ELECTRIFIES HIS SEBASTOPOL RANCH

W. C. Thole, lessee of the Le Franchi ranch, near Sebastopol, has just completed having his place completely electrically equipped. A. O. Hansen, local electric contractor, has done the work of installing an electrical milking plant, refrigerating plant, and a five-horsepower motor, as well as installing electric lights in the house and milkhouse. In order to furnish the ranch with its electrical power the Pacific Gas & Electric Comuany had to run a half-mile extension from the town of Sebastopol.—Santa Rosa Press-Democrat, March 6, 1919.

Sacramento District

The tractor is fast replacing the horse in all large farming districts, and Sacramento is rapidly becoming the tractor center of Northern California.

There have been established here in the last few months a dozen or more tractor agencies. Additional interest will be given by the coming demonstration of the California Tractor and Implement Association to be held here May 5th to 10th. It is expected at least 100,000 visitors will come to Sacramento during that time. This demonstration will not only be of interest to the prospective purchasers of tractors but to all who may attend, as a good operator can put a tractor through some wonderful stunts.

February 20, 1919, will mark the day of Sacramento's biggest stride on the road to prosperity. On that day articles of incorporation of the \$5,000,000 Virden Packing Company were filed with the Secretary of State and the County Clerk. In addition to the packing of all kinds of meats, a canning factory will be operated to handle fruits and vegetables of all kinds, fish, and other products. building will be located in West Sacramento and will cover about 50 acres, and employ from 1500 to 2000 men. The operation of this plant will make a weekly market for 5000 hogs, 2000 cattle and 3000 sheep.

In connection with the above the fol-

lowing factories have been located on the west bank of the Sacramento River:

Commin-McCall Co., makers of fruit boxes, employing 50 workmen; California Rice Milling Co., 50 workmen; National Rice Milling Company, 200 workmen; Horst Dehydrating Plant, 100 workmen; and a bean cleaning plant, 50 workmen. With all of these recent additions to our manufacturing and big business interests, just watch us grow.

Out at the car barn we have just completed remodeling five of the California type of cars to the pay-as-you-enter type; thereby not only having the advantage of a pay-as-you-enter type of car, but, by protecting the open space with wire panels and a collapsible gate, we have taken a stride along the line of "Safety First" and at the same time we consider the general appearance of the car has been greatly improved. We are now preparing to convert seven more.

C. W. McKillip.

Redwood District

COULD THIS BE TRUE?

We don't know how true this story is and we refuse to stand responsible for it, but this is what was told us happened recently down around San Mateo beach when E. W. Florence was taking his daily plunge into the waters of that section. Florence, who is manager of the San Mateo County District for the Pacific Gas and Electric Company, and who weighs in the neighborhood of two hundred and fifty pounds, which also supports a most pleasing smile and congenial personality, would swim every day of the week if his work would allow him to take time for it. Incidentally, Ed's wife is also somewhat of a swimmer and occasionally can be seen accompanying her meal ticket on a long swim. At any rate, they tell us that while Ed was taking it easy one day floating in the water, several children in bathing became suddenly frightened and, running home to their parents, screamed that one of Germany's submarines was lurking around, and they refused to indulge again until the object had made its disappearance. But Florence, of course, didn't know what the trouble was about and unsuspectingly kept the others from going in any more that day. Pipe down! -Schaw-Batcher Times, February, 1919.

· San Francisco District

Geo. H. Searle of the Electric Department is back on the job after a serious relapse of influenza. George reports that the people of Alameda are not immune from the flu.

Lieutenant Grover Hart, formerly of the Electric Department, has returned from France. Grover has some interesting experiences to relate, also having brought quite a number of trophies from the battle front.

Arthur J. Parker is again with "Pacific Service," after doing his bit for Uncle Sam.

Milton Durand has returned from radio inspection service and is again busy checking up job numbers, etc., for "Pacific Service."

The following men have returned from the service of their country to civil life and are again in "Pacific Service": L. Z. Anderson, E. C. Southwood, Harold Gerber, Pat Donovan, F. M. Perra, H. A. Gardiner, Wm. Waters, E. F. Peterson. Henry Honnef, F. L. Cook, W. J. Pippey, J. B. Hunnell, L. F. Hart, P. H. Gilbert, R. S. Ostrowski, Jos. Cook.

The street lighting in the Triangle District has been completed. The triangle is the section between Market and Sutter Streets from Powell to Kearny Street. The lighting in this district consists of 110 all-night lamps and 164 midnight series luminous 6.6 amp. arc lamps with S. F. No. 3 Carrara globes similar to the Path of Gold lighting. Both are operated by "Pacific Service."

PROGRESS OF WORK AT STATION "A"

The condenser for No. 4 turbine has arrived and is now set in place, also the work of connecting the salt water pipes to the above condenser has been completed.

The above work is being done in connection with the new 15,000 k.w. turbine, which is slated to arrive some time in May.

The 200 k. w. steam turbine exciter has arrived and is being installed.

The installation of the eight new Stirling boilers is under way. This is quite a job, as it involves the removing of five old boilers, also the taking down of eight old economizers which have been in service for the past twenty years.



"Pacific Service" Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF MARCH 15th, 1919 · Total Number -

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Baugh, Sergt. Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler, Joseph, Jr.
Buzzell, Sergt. Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
†Dunton, Harold C. Dunne, Bett. Edward A. †
Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Grav E. I. Gray, E. L.

RAL OFFICES—SAN FRAI
Hammond, Everett E.
Hansen, Ernest Axel
Hanck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindstrom, W. J.
McDermott, Louis Wm.
McDonald, Hayward C.
Mel, Capt. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
Murgatroyd, Robert
Murphy, Lieut. Elmo Neil
Nordling, Wm.

Osborn, Lieut. Norris W. Parker Charles G. Regan, Arthur Rossiter, Sidney Benjamin Rossiter, Sidney Benjamin Rubenstein, Frank Sam Schuster, Lieut. John C. Sbaw, S. B. Smith, Cyrus Newell Spinetti, John V. Stevenson, Lieut. Richard H. Sultan, Lieut. Walter D. Terhell, Sergt. Jacques Thomas, Lieut. G. M. Trowbridge, Capt. Alfred L. Trudrung, Harry Watson, John Wilkins, R. *Wilhelm, Clarence
Williams, Lieut, Leroy G.
Wright, Lieut, Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn., October 14th, 1918. ‡Died of pneumonia in San Francisco, December 27th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Corpl. Harold M. Barr, John Milton Barrett, George Bates, Byron M. Belford, William Bennetts, Herman V. Bellord, William
Bennetts, Herman V.
Bertolacci, Ensign R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cooper, Walter Haines
Cormack. Douglas Leslie
Cowell, Charles Merritt
Currier, J.
Deuschle, Fred W
Duceo, Daniel
Dupuoy, Max
Erickson, William
Fairchilds, F. C.
Ferguson, Allen E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D. Gay, Earl D.

LAMEDA COUNTY DISTRIHansen, Sergt. Hans J.
Henderson, John Thomas
Hendricks, Normal Z.
Hindman, J. E.
Hoffman, E. J.
Hughes, William C.
Hunt, Lient. Malcolm L.
Jacobs, Sergt. Edward
Jenkins, Harry R.
Jensen, Chas. Christian
Jones. Sergt. Ivor
Keesling, Lieut. Homer Grant
Kendrick, Eldon W.
Klinefelter, Sam
Knopla, Charles
Knott, Chas. E.
Larson, Harry Knott, Chas. E.
Larson, Harry
Larue, Chester Walton
Longo, Michael
Luce, Sergt. George L.
Maslin, Capt. Francis I.
Massoni, Dante
McKenzie, Malcolm M.
Mills, Leon A.
Morrill, Corpl. Lloyd M.
Mosher, James Nelson
Nelson, George A.
Nelson, Norcal

Oswald, James Parsons, James Perkins, Erwin S. Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Ensign Horace Ear
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Frederick J.
Sprott, Bryan Southeriand, Frederica S.
Sprott, Bryan
Stephens, Alden Raymond
Thompson, Clark C.
Veirs, Harry D., Jr.
Wagner, Ralph Otto
Watham, Ralph Owen
Watham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst, Leslie Youngstrom, A. B.

Curtis Ray E.

CHICO DISTRICT

Andrews, Crist C. Broyles, George R. *Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Raymond Carro Dusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E. Beaumont, Floyd Burton Boyd, William Thomas Compton, John A.

COLGATE DISTRICT

Hunt, Edward C. Johnson, Oliver Ray Meagher, Francis Joseph Randall, Earl Roscoc *Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

Kelly, A. T. Knight, Lieut. Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Truitt, James O.

Mellerup, Fred H. Mess, Lieut. Charles T. Netherton, Raymond Wayne Royater, Sergt. Joseph A. Teachenor, J. L.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W. Johnson, Samuel T

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James, Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Burkleo, Dan Butterworth, William Z. Corlew, Harland Hall Devlin, John A., Jr. Dickson, John Downing, Robert W.

Dallerup, Chas. DeLiale, Leon Emerald, Maurice A.

Adama, James Albert Averhill, Sergt. H. W. *Berkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

Beveridge, James

Kent, James Cody

Anderson, W. O.
Boulware, Wm. F.
Bryggman, Emil W.
Budalich, Oialy A.
Gaussou, Jean
Gasey, T.
Chase, Corpl. H. A
Clausen, J. J.
Cullen, John P.

DRUM DISTRICT

Lohse, Lieut. Marcel P Michael, John L.

ELECTRA DISTRICT

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Gomes, Carl Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold

MARIN DISTRICT

Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Chester H.
Hefner, Joseph Philip
Holdridge, H. Earl
Holmgren, J. E.

Hubbard, Sergt. H. W.
Johnston, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

*Killed in action on or about November 9th, 1918.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl, Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William Young, Joseph P.

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton

Patterson, Sergt. A. Earl

Ryan, R.
Stearns, O. J.
Stearns, Ray
Storm, Sergt. Walter E.
Thunberg, Frank W.
Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

Taylor, Albert P. Taylor, Lieut. Cary P.

Sutcliffe, Lieut, Harold T

Fairchilds, John H.

NAME OF THE PARTY OF

NAPA DISTRICT

Gash, Lieut. Frank Taylor Mayfield, James M. Osborne, Lieut. Butler J. Snow, Wilbur Roland

NEVADA DISTRICT

Beloud, Leon C. Snell, Verne C. Earl, George Richards, James

PETALUMA DISTRICT

Jones, Claude O.

PLACER DISTRICT

Leary, Jerry

REDWOOD DISTRICT

Deloy, H.
Fulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
Harcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.

Jennings, Edward J.
Johnson, Corpl. Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Lundquist, Leonard L.
Mengel, Henry

*Killed in action in France, Oct. 1st, 1918.

SACRAMENTO DISTRICT

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baldwin, Capt. George B.
Baugh, R. W.
Belluomini, Prest G.
Brady, Theodore
Brewater, G. V.
Brown, Jay G.
Bryson, Vincent G.

SACRAMI
SACRAMI
Government Sacrama
Government Sacrama
Government Sacrama
Government Sacrama
Dick, Silas S.
France, Fred Rhodes
Hochderffer, W. E.
Hornbeck, John Chas.
Johnson, William Max
Klein, Earl Everett

Logan, Raymond M.
Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Newington, David
O'Connor, Edward T.
Olsen, Albert
Raymond, Harold A.
Richeson, Merle C.
Riggles, R. F.

Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
*Sngeett, Archie Dean
Williams, Lester J.

Peers, G. A.
Raynard, Duncan
Sampson, L. E.
Sebben, J. E.
Smith, Corpl. R. F.
Strofeld, George
Thane, Alexander
Uhlenberg, Louis H.
Yost, Charles Z.

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.)

SACRAMENTO SUPPLY DISTRICT Jackson, Claude E. Jones, Verne H. Kinz, William J.

Beeler, Joseph J. Black, Marion Derr, Harvey Dyer, John B.

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
Bowers, Sergt Harold S.
Francouer, Raymond J.
Gewirtz, A.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J.

Gibney, Walter Haiden, Walter Inteman, R. Jacobsen, Earl D. Keating, Arthur Edward Koch, Carl Locke, Harry M. McKenzie, Alfred

Gilhuly, Aloysius M.

Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E. Wilson, Reginald St. Clair Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L. Allen, Fred H. Altland, Comer A.

Altland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Capt. Guy A.
Beatie. Gerald
Biehl, Lieut. P. F.
Brady, George B.
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F
Clark, Lyle G.
Cook, Frank L.
Cook, Joseph
Crompton, Walter James
Daley, Lieut. Robert

Daley, Lieut. Robert Davidson, David Dodge, Chas. P. Donovan, Patrick Drew, Harold Durand, Milton J Eichbaum, Sergt. C. W., Jr. Ellis, Clarence L.

SAN FRANCISCO DISTRICT-Concluded.

COLLECTION DEPARTMENT

O'Connor, Charles A. Oliver, Adrian Pierce

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E. Shea, Cornelius Thomas Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

ELECTRICAL DEPARTMENT

Estes, Sergt. Melville N.
Fogalsang, W. J.
Fowler, E. H.
Gardiner, Harold Anson
Gaston, Lieut. J. B.
Gerher, Harold
Gilbert, Paul H.
Glasson, Pearce
Griffin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hildebrand, Ernest
Honnef, Henry
Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Kobylinski, Walter
Locks, Herman J., Jr. Locks, Herman J., Jr.

Madden, Joseph J.

Martin, William T.

McDougall, Chas. A.

McKinnon, J. P.

Merkelbach, Corpl. Juliua

Meyers, Alfred Henry

Ogilvie, Clarence H.

Ostrowski, Ray

Parker, A. J.

Peterson, Ernest Andrew

Peterson, Ernest F.

Pippey, William J.

Pringle, Sergt. Alec.

Rasmussen, Nels Goldman

Robinson, Gordon

Roche, Wilfred Patrick

Roseberry, Edwin Bruce

Scannell, Florence

Schultz, Kurt William

Seifkes, Sergt. Lane F.

Shields, Lieut. Garrison F.

Siggins, N. J.
Southwood, Emerson C.
Spandau, Capt. R. D.
Stohler, Adolph
Sundberg, Emil
Sweeney Michael
Szczepanski, Edgar M.
Thompson, Capt. A. R.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
Varney, Capt. K. Roberts
Wagner, Hilmor A.
Walker, R. J.
Walsh, Thomas W.
Waters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action September 29th, 1918.

GAS DISTRIBUTION DEPARTMENT

Gowans, Robert B. Hansen, John T. Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herbert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

Ambler, J. R. Black, John Doherty, James Hallahan, Maurice

*Barry, Gail W. Buchella, Frank Close, Wm. Lansing

Doherty, John Glennon, Joseph D.

Hanley, Leo J.

GAS MANUFACTURING DEPARTMENT Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

RECORDS DEPARTMENT Hughes, Percy Anthony

McDonald, Wm. John

SAN FRANCISCO SUPPLY DISTRICT

Abercrombe, Corpl. Donald Andresen, Corp. Carl. Blair, Walter B. Clark, Richard Clark, William

Faight, Corpl. Forrest W. Flint, Lieut. Arthur P.

Argall, Marsden Stratton Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Burns, Raymond J. Caldwell, Lieut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix. Francis L.

Bischoff, O. E. Boots, Benjamin

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, John McCarthy, John McNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J. Lang, R. T. SAN JOAQUIN DISTRICT

Hunt, Lieut. Herbert Tevis Martin, Lieut. David G. McIsaac, Dan Olsen, Melvin L.

SAN JOSE DISTRICT

Candello, Lorenzo Candello, Lorenzo Carroll, Louis Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Erbentraut, Edwin Otis Faulkner, Chas. C. Fiman, Edward F. Frederickson, J. C. Frier, George S. Hale, Lieut. C. St. John Hall, Sergt. Evans E. Harkness, T. J. Jensen, Elmer D. Johnson, Capt. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J.

Riley, Norman Sidney Young, C. Cuyler

Perassa, Louis Polson, Edward Queirolo, Chas. Quigley, James L.

Riesen, Alvin
Rowe, Lieut. Ernest W.
Roy, Harvey Leon
Singleton. Paul
Sprung, Lieut. Stanley W.
Stojanovich, Tony
Suess, Walter R.
Tarp. James P.
Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Ross, Mervyn F.

Short, Ralph C.

SOLANO DISTRICT Moore, George R.

Morgan, Mervin E.

VALLEJO DISTRICT Argabrite, Lieut. Walter M.

YOLO DISTRICT Grandquist, K.

Howard, Everett J.

AUXILIARY ROLL OF HONOR

RED CROSS Curtis, Miss Letitia A. (Head Office)

Y. M. C. A. Traxler, Jesse E. (Alameda Co. District)

PACIFIC GAS AND ELECTRIC COMPANY

A CALIFORNIA CORPORATION

Managed by Californians

Operated by Californians

"PACIFIC SERVICE" REPRESENTS

4,066 employees in all departments.

\$138,000,000 capital invested in gas, electricity, railroads and water plants.

37,775 square miles of territory in which it operates.

8,250 stockholders.

32 counties of the State in which it transacts business.

477,012 consumers served with gas, electricity, water and steam as of Dec. 31st, 1918.

1,823,108 people served in 32 counties.

178 cities and towns in which it supplies service directly and through other companies.

\$5,311,800 annual wages paid employees in 1918.

\$1,087,000 taxes paid to the State of California for 1918.

\$574,000 taxes paid to the Federal Government for 1918.

163,003 horsepower developed in 13 electric water-power plants.

100,536 horsepower developed in 3 electric steam plants.

263,539 total horsepower developed in 16 plants.

628,922,910 k. w. hrs. sold in 1918.

9,255,960,600 cubic feet of gas sold in 1918.

18 gas plants.

30,400 miles of wire used in distributing electricity.

2,903 miles of mains used in distributing gas.

854 miles of mains and ditches used in distributing water.

700 miles of track of street railways supplied with electric power.

47,651,808,557 gallons of water stored in 68 lakes and reservoirs. This amount of water would supply the city of San Francisco for over 3 years.

56,607 acres of land owned in California.

167 parcels of property owned in cities and towns.

3,245,934 barrels of California oil used in 1918.

78,491 horsepower in agricultural motors depending on "Pacific Service."

297,786 horsepower in mining, electric railways, manufacturing and other motors depending on "Pacific Service."

61,685 street lamps, gas and electric, lighted by "Pacific Service"

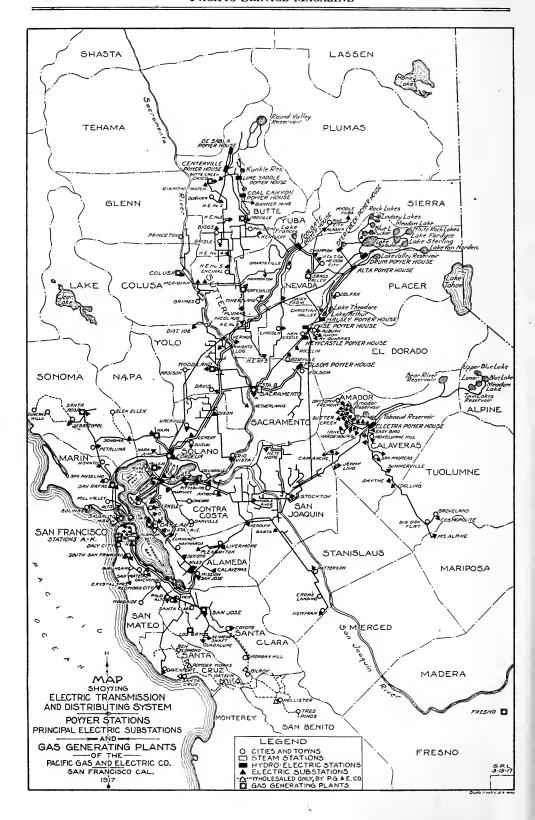
4,207,225 incandescent lamps nightly lighted.

663,399 horsepower connected to system. This represents the equivalent of 5,307,200 men.

PACIFIC GAS AND ELECTRIC COMPANY

Head Office: 445 Sutter Street SAN FRANCISCO

Branches in all principal cities and towns of thirty-two counties in North-Central California



Pacific Gas and Electric Company Furnishes

"PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DIRECTLY		INDIRECTLY		TOTAL	
	No.	POPULATION	No.	Population	No.	Population
Electricity	128	1,210,830	48	132,825	176	1,343,655
Gas	51	1,219,690	2	8,600	53	1,343,655 1,228,292
Water (Domestic)	11	57,302	8	19,300	19	76,600
Railway	1	76,000			1	76,000

CITIES AND TOWNS SERVED BY COMPANY:

		CITIES AND TO	11113 3	ERVED BI COM			
Place Por	ulation	Place Pop	ulation	Place Po	noulation	Place Por	oulation
Alameda	30,000	El Vetano	400	MokelumneHill	300	*San Quentin	2.500
Albany	2,300	Emervville	3.000	*Morgan Hill	750	San Rafael	6.000
Alvarado	700	Esparto	250	Mountain View	2,500	Santa Clara	6,000
Alviso	550	Fairfax	250	Mt. Eden	210	*Santa Cruz	13,600
4-4Amador City	1.100	Fairfield	1.000	Napa	6,500	² Santa Rosa	11.000
	280	Fairneid	300	Nevada City	2.900	Saratoga	300
Angel Island		Fair Oaks	300		505	Saratoga	3,000
Antioch	2,000	*Felton	2.000	Newark	950	Sausalito	1.950
Aptos	300	Folsom		Newcastle		Sebastopol	
Atherton	250	Forestville	225	Newman	1,200	Shellville	200
8-8Auburn	2,800	¹Fresno	48,867	Niles	1,000	Sheridan	250
Barber	500	Gilroy	2,900	Novato	400	Smartsville	300
*Belmont	375	*Glen Ellen	900	² Oakland	225,000	*Soquel	400
Belvedere	550	-⁴Grass Valley	5,200	Oakley	200	Sonoma	1,290
Benicia	2,400	Gridley	1,800	*Occidental	600	¹ South San	
*Ben Lomond	800	Grimes	350	*Oroville	5,000	Francisco	3,750
³ Betkeley	65,000	Groveland	250	Pacheco	250	3-7Stanford Uni-	
*Biggs	500	Guerneville	780	³-¹Palo Alto	6,000	versity	2,600
Bolinas	200	Hammonton	500	Paradise	500	4-4Stockton	42,000
Broderick	600	¹ Hayward	4.000	Patterson	500	Suisun	800
Burlingame	4.000	Hillsborough	950	Penn Grove	300	Sunol	340
Campbell	700	'Hollister	2,500	Penryn	250	Sunnyvale	1.650
*Capitola	275	8-8Ione	1.000	Perkins	250	Sutter City	250
Cement	1.000	Irvington	800	*Petaluma	7,500	8-8Sutter Creek	1.300
Centerville	850	8-8Jackson	2,100	Piedmont	3,500	Tiburon	350
Chico	15,000	*Kentfield	500	Pike City	200	*Tres Pinos	300
*Colfax	500	⁶ Kenwood	200	Pinole	1.800	Vacaville	1,250
*Colma	1.800	Knights Land-	200	Pittsburg	6,000	²- Vallejo	15.500
Colma	2.000		400	Pleasanton	1.500	*Vineburg	200
Colusa	850	ing Larkspur	2.000	Port Costa	1.000	Walnut Creek .	500
Concord	300	*-*Lincoln	1.500	Redwood City.	4.200	Warm Springs.	200
Cordelia	350		300	2-4Richmond	16.500	*Watsonville	6.000
Corte Madera.		Live Oak	2.500	Rio Vista	1.000	Wheatland	500
1-1Cotati	200	Livermore	450	*Rocklin	900	Winters	1,200
Coyote	200	Lomita Park	450	(Dadas	300	Winters	5.000
Crockett	3,000	*Loomis	500	*Rodeo	4,200	Woodside	225
Crow's Landing	300	Los Altos			900	woodside	350
Daly City	5,500	Los Gatos	3,000	² Ross	76,000	Yolo	1.750
Danville	400	Madison	250	Sacramento	75,000	³Yuba City	1,730
Davenport	300	'Mare Island	500	San Andreas		_	
Davis	1,700	Martinez	3,500	San Anselmo	3,000	Total Cities	
Decoto	300	³ Marysville	6,000	San Bruno	1,500	and Towns1.	422 522
*Dixon	1,200	Mayfield	1,100	San Francisco	580,000	and lowns	,422,322
Drytown	225	3Menlo Park	1,100	San Jose	45,000	Add Suburban	
Duncan's Mills	200	Meridian	225	*San Juan	550	Population	400,586
Durham	300	³ Millbrae	300	San Leandro	5,000	ropulation	100,560
8-6Dutch Flat	750	Mills	350	San Lorenzo	400	_	
*Eldridge	500	Mill Valley	3,200	San Martin	200	m	
*- El Cerrito	1,200	Milpitas	350	San Mateo	6,000	Total Popula-	922 100
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,823,108

Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

—Gas, Electricity and Water. ←Gas, Elect. and St. Railways. ←Electricity and Water. Electricity supplied through other companies.
Gas supplied through other companies.
Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers		. 210,225
Number of Gas Consumers		.256,059
Number of Water Consumers		. 12,625
Number of Steam Consumers		
Total number of consumers		

Operates 13 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Getting the Facts for Investment

TVERY investor needs the best information obtainable.

The National City Company aims to supply that need, in addition to offering attractive securities for investment.

Thus, the Company maintains six distinct departments whose sole business is to gather and analyze complete data on the securities of Governments, States and Municipalities, and of Railroad, Public Utility and Industrial Corporations.

You are invited to call on the Company for information regarding any class of securities. There is neither charge nor obligation.

Our correspondent offices, located in thirty investment centers (many of them having private wires to New York), are able to place the Company's entire facilities your command.

Send for current list of investment offerings.

The National City Company

National City Bank Building, New York

CORRESPONDENT OFFICES

ALBANY, IN.
Ten Eyck Building
ATLANTA, GA.
Trust Co. of Ga. Bldg.
BALTIMORB, MD.
Munsey Building
Boston, Mass.
10 State Street
BUFFALO, N. Y.
Marine Bank Bldg.
CHICAGO, I.L.
137 So. La Salle Street
CINCINNATI, OHIO
FOUrth Natl. Bank Bldg.
CLEVELAND, OHIO
CLEVELAND, OHIO
TO Alan Building

Short

DENVER, COLD.
First National Bank B
First National Bank B
First National Bank B
Intransp.
147 Griswold St.
HARTROB, CONN.
CONN.
CONN.
MICHAPOLIS, IMDIANAPOLIS, IMDIANAPOLIS, MINN.
MCKnight Building

Short ALBANY, N. Y. Ten Eyck Building

DAYTON, OHIO Mutual Home Bldg. MURITAL FLOWER SIGN.

PERSON COLO.

FIRST NATIONAL BANK BID.

STEW ORLEANS, LA.

SOL BARRONE STREET

NEW ORLEANS, LA.

301 Baronne Street

PHILADELPHIA, PA.

HARTFORD, CONN.

CONN. MURITAL BID.

PITTSBURGH, PA.

PLANTED CO.

PA.

PITTSBURGH, PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA.

PLANTED CO.

PA. RINDIANAPOLIS, IND.
Fletcher Sav. & Trust Bds. Portland, Mr.
Kansas Ciry, Mo.
Republic Building
Los Ancelles, Cal.
Hibernian Building
Hibernian Building
Hibernian Building

NEWARK, N. J. 790 Broad Street 1421 Chestnut Street PITTSBURGH, PA. Farmers Bank Bldg. PORTLAND, ORE. Railway Exchange Bldg. PROVIDENCE, R. I.
Industrial Trust Bldg.

RICHMOND, VA. 1214 Mutual Bldg. SAN FRANCISCO, CAL. 424 California Street SEATTLE, WASH. Hoge Building Springfield, Mass. Third Nat. Bank Bldg. St. Louis, Mo. Bk. of Commerce Bldg. Washington, D. C. 741 15th Street, N.W WILKES-BARRE, PA.
Miners Bank Building

Bonds

Short Term Notes

Acceptances





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. Crocker
F. G. Drum

JOHN S. DRUM
F. T. Elsey
D. H. FOOTE
W. G. HENSHAW
A. F. Hockenbeamer

JOHN D. MCKEE
JOHN A. McCandless
C. O. G. MILLER
NION R. TUCKER
George K. Weeks

OFFICERS

															President
JOHN A. BRITTON														1	Vice-President and General Manager
															second Vice-President and Treasurer
D. H. FOOTE															Secretary and Assistant Treasurer
Jos. C. Love	٠														Assistant Treasurer
Chas. L. Barrett .	•	٠	٠	٠	٠	٠	٠	٠		٠	٠	٠	٠		Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM								Consulting Engineer
								Attorney
R. J. Cantrell								Property Agent
J. P. Coghlan .								Manager Claims Department
C. P. Cutten .								Attorney, Rate Department
P. M. Downing							C	Chief Engineer Electric Department
E. B. Henley .								Manager Land Department
								Purchasing Agent
								Engineer Electrical Construction
E. C. Jones								Chief Engineer Gas Department
								. Manager Publicity Department
								Manager Commercial Department
GEO. H. RAND .								Manager of Collections
								General Auditor
								Superintendent of Supplies
W. G. VINCENT, J.	R.							Valuation Engineer

DISTRICT MANAGERS

DISTRICT MANAGERS	
DISTRICT HEADQUARTERS	MANAGER
Alameda County Oakland	F. A. LEACH, JR.
Снісо	H. B. Heryford
Colgate Colgate	MILES WERRY
Contra Costa	Don C. RAY
De Sabla De Sabla	I. B. Adams
Drum	. James Martin
ELECTRA	. W. E. Eskew
Fresno Fresno	. M. L. NEELY
Marin San Rafael	H. G. RIDGWAY
Marysville Marysville	E. C. Johnson
Napa Napa	. C. D. Clark
Nevada Nevada City	L. H. HARTSOCK
Petaluma Petaluma	H. Weber
PLACER East Auburn	H. M. Cooper
Redwood City Redwood City	E. W. FLORENCE
Sacramento Sacramento	C. W. McKillip
San Francisco San Francisco	HENRY BOSTWICK
San Joaquin Stockton	J. W. HALL
San Jose San Jose	. J. D. Kuster
Santa Rosa Santa Rosa	M. G. HALL
Solano Dixon	C. E. Sedgwick
Vallejo Vallejo	A. J. Stephens
Yoro	. J. W. Coons

Pacific Service Magazine

Volume X



Number 11

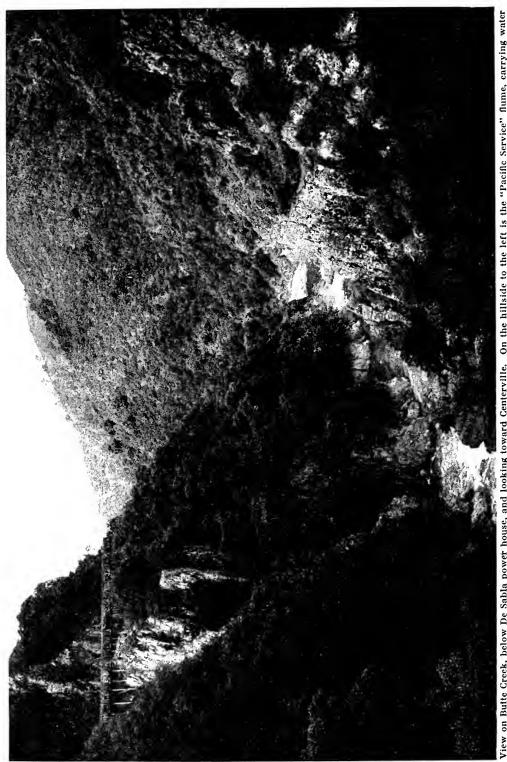
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for April, 1919

VIEW ON BUTTE CREEK BELOW DE SABLA POWER HOUSE				Fr	on	tisp	iece
THE "PACIFIC SERVICE" RECORD FOR 1918 EXCELLENT SHOWING MADE BY THE ADMINISTRATION FOR THIS MOMENTOUS PERIOD OF THE COMPANY'S HISTORY IS EVIDENCED BY THE DECLARATION OF A COMMON STOCK							
DIVIDEND	٠	٠	•	•		•	335
	•						336
REPORT OF MR. A. F. HOCKENBEAMER							342
CO-OPERATIVE ELECTRICAL CAMPAIGN MOVES APACE							344
DIANG FOR THE GOAGE N F I A CON							
PLANS FOR THE COAST N. E. L. A. CON- VENTION							345
P. C. G. A. MEN MEET IN THE SOUTHLAND							346
CLOSING REMARKS ON THE VICTORY LIBERTY LOAN							347
OUR "PACIFIC SERVICE" EMPLOYEES AS-							
SOCIATION							348
THE "PACIFIC SERVICE" ROLL OF HONOR						٠.	353
EDITORIAL							356
TIDINGS FROM TERRITORIAL DISTRICTS .							358

Index to Advertisers

Allis-Chalmers Mfg. Co iii	Pelton Water Wheel Co j	ν
Chaplin-Fulton Mfg. Co vi	Sprague Meter Co is	٧
General Electric Co i	Standard Underground Cable Co	v
General Gaa Light Cov	Steiger & Kerr Stove & Foundry Co i	ii
Graham Mfg. Co., Jas vi	Welsbach Company ii	ii
National City Company 4th page cover	Western Pipe & Steel Co. of California iv	٧
Pacific Meter Co iv	Westinghouse Electric & Mfg. Co vi	ii
Pacific Telephone and Telegraph Co v	Wood, R. D., & Co i	ii



View on Butte Creek, below De Sabla power house, and looking toward Centerville. On the hillside to the left is the "Pacific Service" flume, carrying water diverted from the stream just below De Sabla on its eight-mile journey to the point where it is dropped 500 feet to the turbine in Centerville power house.

Volume X

APRIL, 1919

Number 11

The "Pacific Service" Record for 1918

Excellent Showing Made by the Administration for this
Momentous Period of the Company's History
is Evidenced by the Declaration of a
Common Stock Dividend

THE annual meeting of our company's stockholders was held on the afternoon of Tuesday, April 8th, at headquarters, 445 Sutter Street, San Francisco. The year which had just gone by had been a momentous one not only to our company but to all public utilities in the country. While our gallant boys were fighting the cause of liberty across the seas those left at home were confronted with problems of an unusual character. The support of the United States Government in its conduct of America's share in the war was a matter, of course, of paramount importance, and from all classes of the people personal sacrifices were called for in order that our great country might meet the demands made upon it by the nations allied with it in the struggle. Naturally, then, conditions that existed hit the public utilities hard, so to speak, and the entire period leading up to the cessation of hostilities and the return of our troops from abroad was one in which no excuses could be made for inefficiency anywhere.

Speaking for "Pacific Service," the continual inroads made into its various departments by the induction of men into the service of the United States and the havoc caused by the prevailing epidemic of influenza combined with the scarcity of material necessary to the proper conduct of our business and the abnormal prices prevailing to make our task a

difficult one, and only by the observance of the strictest economy in every branch of the business, with the maintenance of the highest possible efficiency, could it be accomplished.

But it was accomplished, and not only has "Pacific Service" an enviable record for patriotism but it is also able to present a remarkable showing to its stock-The reports of Vice-President holders. and General Manager John A. Britton and Second Vice-President and Treasurer A. F. Hockenbeamer set forth in detail the many problems which had been met and solved in both the operating and financial branches of the company's activities during the past year, and no better proof of the excellent showing made in these reports could possibly have been afforded than by the subsequent announcement of a dividend of \$1.25 per share on the common stock. This was voted at a meeting of the executive committee following the stockholders' meeting, and it is not too much to say that this declaration told the story.

The implicit confidence of the stock-holders in the present administration was proven when they unanimously re-elected the old directorate for the ensuing year. The reports of Mr. Britton and Mr. Hockenbeamer speak for themselves and are here given in their entirety.

EDITOR PACIFIC SERVICE MAGAZINE.

Report of Mr. John A. Britton

The year 1918 was one of momentous importance to the nation, signalized by the close of hostilities against the Central Powers on November 11th. It was also one of anxiety to all public utility corporations, including the Pacific Gas and Electric Company, due to many causes, among them in our case being the withdrawal of many employees who entered the service of our country, thereby rendering it necessary in all departments to depend upon more or less inexperienced help. The latter part of the year was marked by a serious epidemic of influenza, lessening our forces, congesting work and making efficiency impossible. In the operating end the shortage of water in the summer months added to costs in steam production of energy. creased in price, labor soared to hitherto unknown heights, and by its inexperience further added to costs, and materials reached and stayed at maximum prices. The curtailment, by orders of the Government, of certain industries, the daylight saving act, and natural economies of our consumers tended also to reduce profits.

To partially offset the foregoing condition rigid economies were instituted all departments, in maintenance, operating and construction, which economies are reflected in the year's results. Except in practically war emergency work, no new construction was authorized, the amounts spent for new plants during the year being less than for many years past. The economies in operation would have been more apparent had not labor costs constantly and persistently increased, due largely to incentives held out by large wages offered in shipyards, etc., requiring a sympathetic advance on our part to hold our forces. The main relief afforded during the year was in the surcharge allowed by the Railroad Commission on gas and electric rates in June and July of 1918.

As illustrating the handicaps in all departments by men entering the service our service flag shows 607 silver stars and nine gold stars, certainly a splendid record of patriotic service. One hundred and thirty-five of those 598 have been restored to our ranks. The remainder will be in due time cared for.

The total gross income for 1918 was \$22,595,516.69, an increase of \$2,782,-135.75 over 1917, divided as follows:

Electric							 						\$12,384,498.86
Gas						 	 						8,923,484.43
Water							 						509,273.09
Railway							 	 					534,067.46
Steam							 						244,192.85

Total \$22,595,516.69 ELECTRIC DEPARTMENT

The gross sales of electric energy amounted to 628,922,910 K. W. H., an increase over 1917 of 41,778,849 K. W. H., or 7.12 per cent.

The average rate per K. W. H. obtained in 1918 shows an increase of about 6 per cent compared with 1917, which is an extremely small advance contrasted with the increased prices of clothing and all other articles of everyday use. The sales per consumer were \$61.32, as against \$58.28 in 1917. Number of electric consumers as of December 31st, 1918, 209,412. Gain over 1917, 15,038.

PRODUCTION OF ELECTRIC ENERGY IN K.W.H.

1917	
Increase	67,938,574

System load factor, 63.1: System peak occurred November 26th at 5:30 p. m. and amounted to 223,465 H. P.

Average daily load, 141,094 H.P.

CONNECTED LOAD	н. Р.
Commercial and residence lighting	281,986
Street lighting	5,136
Industrial	239,877
Railway	57,909
Agricultural	78,491
	663,399
In 1917	636,855
Increase	26,544
Per cent increase	4 17

It was determined by a survey made by a representative of the War Industries Board that of the power load connected to the system of the company, aggregating 310,133 H. P., 90.5 per cent was a war or public necessity.

The capacity of the plants of the company generating electric energy is as follows, expressed in horsepower:

HYDRO PLANTS
Alta, Placer County 2,681
Centerville, Butte County 8,579
Coal Canyon, Butte County 1,340
Colgate, Yuba County 19,035
De Sabla, Butte County 17,426
Deer Creek, Nevada County 7,373
Drum, Placer County 33,512
Electra, Amador County 26,810
Folsom, Sacramento County 5,027
Halsey, Placer County 16,756
Lime Saddle, Butte County 2,681
Spaulding, Nevada County 5,027
Wise, Placer County 16,756
STEAM PLANTS 163,003
San Francisco 65,684
Oakland 28,150
Sacramento 6,702 100,536
Total 263,539
Being erected in San Francisco,
steam turbine 20,107
Available for 1919 283,646

The following is a brief description of the distribution facilities for supplying the 209,412 electric consumers connected to the system:

Miles of 110,000-volt line	
Miles of 24,000-volt line 9	7.6
Miles of 17,000-volt line 9:	2.9
Total high tension lines	

Miles of underground distribution..... 113.3

Number of transformers of all voltages connected to distribution systems, 21,967, having a capacity of 256,041 K.W. will be noted that the ratio of installed capacity to transformer capacity is approximately 2½ to 1 for the entire system.

The number of substations on system is 156, with a total installed capacity of 321,020 K. W. in transformers.

DATE OF DRAFT ON STORAGE

South Yuba—Earliest, June 13, 1918.
Latest, July 25, 1911.
Average 11 seasons, July 8.
Electra—Earliest, July 6, 1910.
Latest, August 12, 1915.
Average 11 seasons, July 25.

The building of a 60,000-volt line from Colusa Corners to the Drum line, a distance of forty-two miles, marked the connection of our system with the Oregon-California system. The line was put into operation January 8th, 1919, and we have been buying power since that date. line approximate cost of this was \$150,000.

The extension of the Wise power line from its junction with the Electra line east of Stockton to Mission San Jose, a distance of 57.5 miles, is practically completed. Approximate cost, \$525,000.

The 15,000 K. W. steam turbine for Station "A," and additional boilers for that station and Station "C" in Oakland, have been under way and will be completed by June 1, 1919, at a cost of approximately \$850,000.

The output of Spaulding, Alta, Drum, Halsey and Wise, the chain of power houses on the South Yuba System, was 210,283,474 K. W. H., an increase of 50,422,851 over 1917. This output for 1918 evidences a saving of 1,050,000barrels of oil.

The development of the use of electric ranges and water heaters on the system is interesting, there being now installed 585 ranges and 346 water heaters.

Owing to the short water season, together with the unprecedented demand for power brought about by the war, directly and indirectly, a Power Committee, consisting of representatives of the large operating companies, at the suggestion of the Railroad Commission, agreed to interconnect their systems. This interconnection resulted in the appointment of a State Power Administrator. During the early part of the year the work of the Power Administrator resulted in a considerable interchange of power between the companies and the reinforcement of existing tie-in connections for the purpose of conserving fuel oil. During this period our company acted more or less as a standby for the other com-Later in the year, when the power demand began to exceed the available supply, considerable load of more or less nonessential nature was taken off, and, as the shortage became more acute, the restrictions were made more drastic until the early fall rains eased the situation gradually, and the signing of the armistice on November 11th enabled all restrictions to be removed.

Throughout the year the draft on storage was controlled entirely by the Power Administrator. Very good results were obtained by requiring large consumers to operate on off-peak hours.

A careful analysis of the situation during the period of control by the State Power Administrator and the United States Fuel Administration indicates that our output was restricted by about the following amounts:

	к. W.п.
Daylight saving law	5,825,000
Reduction in street lighting	1,800,000
Sign lighting, rock crushers, breweries,	
etc., and consumers operating steam	
plants on order of Power Administra-	
tor	3,204,000
Cement companies and $\mathbf{dredgers} \ldots \ldots$	6,991,000
Total reduction in load	17 820 000

The above must not be taken as a measure of our loss, as we were compelled to refuse considerable new business due to the water shortage and the high cost of labor and material.

There is no doubt but that the work of the Power Administrator resulted in satisfactorily taking care of a situation that could not have been cared for so well by the interested companies acting independently.

GAS DEPARTMENT

Total number of gas consumers at close of 1918, 254,432; a gain for the year of 11,250.

In operation, 18 plants, as follows:

San Francisco, 3 plants, supplying 8 cities and suburban territory	
Oakland, supplying 8 cities and	
suburban territory	2,760,176,200
San Jose	294,947,500
Fresno	283,050,000
San Rafael, supplying 4 cities and suburban territory	77,314,200
Santa Rosa, supplying Petaluma, Sebastopol	76,081,500
Napa	30,414,900
Vallejo	93,993,200

Woodland	23,866,700
Chico, supplying 2 cities	29,653,200
Grass Valley, supplying Nevada City	
and suburban territory	15,957,600
Sacramento	321,091,500
Marysville, supplying Yuba City and	
suburban territory	33,956,000
Colusa	13,505,500
Oroville	13,736,300
Los Gatos	9,810,200

Total sales in cubic feet for 1918. 9,255,960,600

To supply this amount of gas required 2,903.37 miles of gas mains of various sizes, from 30-inch to 2-inch, both high and low pressure, operated at pressures from seventy pounds to one-seventh of a pound.

There was used in the manufacture of gas 1,921,752 barrels of oil; an increase over 1917 of 126,759 barrels.

The increase in sales over 1917 was 718,035,500 cubic feet—8.41 per cent.

Distinctive and effective economies in the Gas Department were made during the year.

The increased sales of gas in 1918 over 1917 were largely due to the efforts of our sales force to promote the use of gas for industrial purposes. In San Francisco alone the sales for the year 1918 for industria purposes were 950,000,000 cubic feet.

In San Francisco the peak day output occurred December 14th, 1918, and was 21,886,000 cubic feet.

The abandoned water gas sets at the Potrero were utilized by the United States Government in the manufacture of charcoal from fruit pits and cocoanut fibre for use in its gas defense service. The average daily make of charcoal was eighteen tons, and it is attested by the army officers in charge that the use of the property of the company effected a saving to the Government during the time it was occupied of upwards of \$105,000. This was only one of the many contributions made to the winning of the war by the company.

STREET RAILWAY

Miles of track, 43.90.

Passengers carried, 11,331,864; gain over 1917, 714,911.

The peak year in the operation of the railway system occurred in 1913. Jitney competition, commencing in 1914, resulted in diminished revenues; this form of competition having spent itself by reason of local enactments, the coming year should indicate further gains.

Number of employees, street car system, 225.

Average number of cars in daily use, 54.

Yearly revenue, \$534,067.46.

WATER DEPARTMENT

This department operates five pumping stations, three in the city of Stockton, one in Livermore, Alameda County, and one in Dixon, Solano County. It irrigates, in addition, by a system of reservoirs and ditches, over 20,000 acres of land in Placer, Nevada and Butte counties, besides supplying water in those counties a minor way for power, this latter use, however, being rapidly displaced by electric energy.

The gross revenue for the year from water sales was \$509,273.09.

Number of consumers served, 12,705. Gallons of water pumped, 2,001,005,-118; daily average, 5,482,205.

Gallons of water from gravity system estimated at a daily average in irrigation season of 53,000,000 gallons.

Miles of mains used in pumping system, 123.95.

Miles of ditches and flumes in transmission system, 676.34.

STEAM SALES DEPARTMENT Number of stations operated, 5. Miles of steam mains in use, 10.48. Number of consumers served, 463.

This is a non-profitable part of our activities when taken alone, but is a feeder to our electric revenues and considered in relation thereto may be regarded as a justifiable expense.

Analysis of the results for 1918 brings out some very interesting facts in operation.

Total number of consumers served by all departments, 477,012.

Labor, taxes and oil represent 82 per cent of the total cost of operation.

The total oil used in all departments in 1918 was 3,245,934 barrels, an increase over 1917 of 322,002 barrels, or 10 per cent. The increased cost of oil in 1918 represents \$444,692.96 of the increased operating expenses.

Labor has increased from an average monthly wage per person of \$91.86 in 1915 to \$118.76 in January, 1919, or 29.3 per cent. Taxes in the same period, over 100 per cent. In 1914 taxes absorbed 9.60 per cent of our net operating revenues (before deducting taxes) and 18.48 per cent, approximately, in 1918. 68 cents creased from per in 1915 to \$1.658 in January, 1919, an increase of 97.8 cents per barrel, or 143.8 per cent, reflecting an annual increase in our operating costs of \$2,934,000.

Materials and supplies have likewise increased. Taking thirty-one representative articles generally used and reducing the quantities used during forty months to a monthly basis and applying the market price prevailing, we find that in 1914 these materials would have cost us \$45,414, and in January, 1919, the same materials would have cost \$85,862, an increase of 89 per cent.

The total number of employees during the year decreased 942—from 4988 in 1917 to 4046 in 1918. The payrolls from \$5,747,176.77—an average of \$96 per person per month—to \$5,311,813.62—an average of \$109.40 per person per month.

The Claims Department paid out in 1918 for injury and damages to persons and property, both public and employees, and exclusive of Safety First Expenses, \$97,559.58. Casualty and Compensation Insurance, without provision for damages to property or injuries on the Street Railway System, which the above amount takes care of, would have cost the company in excess of \$225,000, a saving by carrying our own insurance of \$127,500 per annum. There was a total of 1712 accidents reported for the year as against

1908 for the previous year. A large part of this decrease in accidents is directly due to the efforts of the Safety First Department of the company in accident pre-There were only five actions vention. for damages filed in court during the year against the company. The percentage of costs in this department since 1912, when it was instituted, to the gross operating revenues shows a decrease, 1912 being .461 and 1918, .436. amount expended in Safety First work by the Central Safety Committee, which is composed of the employees of the was \$1902.75, as company, \$8002.62 in 1917, showing that the work is practically completed in Safety First appliances and devices. There were 515 workmen injured while working on their jobs during the year. This was a reduction of 158 injuries over 1917. The total cost for injuries to workmen during the vear was \$34,672.68, a decrease over the previous year of \$7879. The average cost per employee was \$8.57, against the cost in the first year of our accident prevention of \$11.74.

In the Law Department there are thirty-eight cases pending, five of these being contested gas rate cases before the Federal Court and two being electric cases; these being litigation against municipalities that sought, before their rights were turned over to the Commission, to force lower rates than the company believed were justified. The others are minor cases involving rights of way and other litigation of no particular moment.

Lunch and rest rooms for the women employees were instituted during the past year, both in the San Francisco office and Oakland main offices, and they have proven a very satisfactory adjunct at a minimum cost.

The fire losses during the year on insurable property aggregated the sum of \$103, due to the watchfulness exercised by the Property Agent in fire protection.

The total insurance premiums paid by

the company for the year aggregated \$4427.77, a decrease over 1917 of \$3355.81. This premium is largely for the insurance of boilers. The total insurance carried aggregated \$4,142,908.

Before the Railroad Commission there were tried and submitted thirty-seven cases, involving the question of rates, removal of discriminations, valuations of property, stock and bond issues, etc., the most important being the application to increase rates in both the gas and electric divisions of the company, and Case No. 1176, which became historical, with reference to the tying in to interconnection of all of the power companies in the State.

There were 161 informal complaints lodged against the company, through the Commission, by consumers during the year, as against 148 in 1917 and 202 in 1916.

Twenty-three new schedules of electric and gas rates were filed.

The year 1919 presents many problems, and it is most difficult to appraise the future. It may, however, be said conservatively that the general results should closely approximate those of 1918, as it is believed that the era of high prices in labor and material has reached a maximum, and while there may be for a time a lessening of some industrial activities, general trade will improve, and the lessening of our sales of low-priced business will be somewhat compensated for by added sales at the higher schedule rates.

The increased snowfall for 1918 and 1919 over the two previous years permits additional kilowatt hours from the several power plants, and in the case of the plants dependent upon storage a lengthened time in which to draw from storage. As to just how much the snowfall will prolong the time of draft on storage is problematic, depending upon unforseeable climatic conditions. Basing the problem, however, upon previous years, it is safe to say that not more than a difference of twenty-five days will result, which, after all, in the total of our de-

mands is a more or less negligible quantity.

This report would be incomplete without special reference being made therein to the activities of the employees of the company.

As an evidence of their patriotism during the war, and outside of the primary evidence shown in the enlistment of men heretofore mentioned, the employees voluntarily contributed toward the several Red Cross, United War Fund and other drives the total sum of \$34,000. They also subscribed through the company and in addition to direct subscriptions the following amounts to the Liberty Loan Bond issues:

First	\$136,200
Second	161,900
Third	115,600
Fourth	222,950
A total of	.\$636,650

The Employees' Association is a distinctive feature of the company, and is and has been eminently successful. It has a membership at the present time of 900. It is a self-governing body, supported partly by contribution from the company and partly by dues collected from members. It is both educational and social in character. Meetings are held during the year at different points on the system. Educational courses in all the phases of the company's activities are given by the heads of departments best qualified. Around the bay regions meetings are held semi-monthly, and the employees are addressed by men of repute on local and national subjects. The organization has within itself a well-organized orchestra, chorus and dramatic personnel.

Headquarters have recently been established for the organization in the company's building on Sutter Street, fitted up for social intercourse, and connected therewith are the well-stocked libraries of the Pacific Coast Gas Association, largely technical in character, and the James Hugh Wise Library, the latter being the donation of James Hugh Wise's mother at the time of his death. These libraries are being added to constantly and are well patronized.

Such an organization tends to keep together in a spirit of co-operation, and perhaps of self-interest, those employees who are ambitious and desirous of bettering themselves, and every opportunity is being offered by the company for this purpose.

I cannot close without expressing my appreciation of the splendid work accomplished during the year by the several departments. In times of stress and times requiring action under serious difficulties, as before recited, I have found each and every department responsive, and whatever measure of success has been accomplished by the company during the past year in its economical administration is due entirely to that spirit of loyalty to the company, which has at all times actuated the several departments, from the heads to the most subordinate of all.



Report of Mr. A. F. Hockenbeamer

At December 31st, 1918, this company was owned by 8242 stockholders, of whom 2288 were women and 5130 residents of California.

The income account of the company for the year 1918, compared with 1917, is as follows:

Gross operating revenue	1918.	1917.	Increase.
	\$22,595,516	\$19,813,381	\$2,782,135
Operating and administrative expenses	9,740,549	8,904,330	836,219
	1,782,939	1,253,239°	529,700
	2,870,841	2,457,121	413,720
Uncollectible accounts and casualties reserves	336,000	240,000	96,000
Total deductions Net earnings from operation Add: Miscellaneous income	\$14,730,329	\$12,854,690	\$1,875,639
	\$ 7,865,187	\$ 6,958,691	\$ 906,496
	510,201	508,347	1,854
Total	\$ 8,375,388	\$ 7,467,038	\$ 908,350
	4,117,066	4,100,907	16,159
Balance Bond discount and expense	\$ 4,258,322	\$ 3,366,131	\$ 892,191
	187,019	185,051	1,968
Balance Additional reserve for depreciation per Railroad Commis- sion order No. 3484	\$ 4,071,303 1,000,000	\$ 3,181,080 1,000,000	\$ 890,223
Surplus	\$ 3,071,303	\$ 2,181,080	\$ 890,223
Dividends paid on preferred stock	1,490,463	1,471,105	19,358
Balance	\$ 1,580,840	\$ 709,975	\$ 870,865

While the year's business was the largest in the history of the company, the costs of conducting the business were also at the highest level ever recorded. This is reflected in the operating ratio of 57.67 per cent in 1918. In other words, in that year the direct costs of the business, including maintenance, operation and taxes, absorbed \$57.67 out of every \$100 of gross revenue. This compares with \$46.79 in 1914, when our affairs had not yet been affected by the outbreak of the war, and with \$51.35 in 1916, the year preceding the entry of the United States into the war. The significance of this rising operating ratio may be appreciated from the statement that on the basis of the gross earnings in 1918 every 1 per cent variation made a difference of more than \$225,000 in the operating While the balance carried to surplus shows quite a satisfactory increase compared with 1917, it was, on the same comparative basis, less than the surplus of 1916 by about \$542,000. In the three years covered by this comparison more than \$10,000,000 of new money was invested in the business.

Changes in stocks and bonds outstanding during the year were as follows:

Three and one-half million dollars par value of General and Refunding Mortgage 5 per cent bonds were sold in December, 1918, to reimburse the company in part for advances to construction account made from working funds and \$1,028,500 of underlying bonds were purchased for sinking funds, so that the net increase in the company's funded debt during the year was \$2,471,500. The amount of first preferred stock outstanding increased by \$156,513, of which \$513 represents the conversion of \$500 par value of original preferred stock and \$156,000 sales to customers and others. Total sales of first preferred stock to the company's customers and others living within its territory aggregated, in the four and one-half years from the inauguration of this policy to December 31, 1918, \$8,359,400.

The current financial condition of the company is excellent, current assets at the close of the year (including cash in the sum of \$4,950,141 and Liberty Loan bonds, fully paid for, amounting to

\$392,450) aggregating \$10,785,239, against which there were current liabilities aggregating \$3,759,537, the difference indicating net working assets of \$7,025,702, exclusive of unreimbursed advances to Construction Account and Company bonds in the Treasury.

The present cash balance arises largely from the proceeds of the sale of bonds in December, 1918, made in anticipation of probable requirements for new construction during the year 1918.

BALANCE SHEET—DECEMBER 31ST, 1918 ASSETS.

ASSETS.
Plants and properties\$139,315,995.88
Discount on capital stock 4,022,756.72
Trustees of sinking funds 207,546.32
Current assets—
Cash\$4,950,141.31
Liberty bonds 392,450.00
Bills and accounts
receivable 2,457,673.25
Materials and sup-
plies 2,178,889.12

Sundry securities. 590,369.99	
Miscellaneous 215,715.59	10,785,239.26
Discount and expense on bonds	4,782,538.76
Other deferred charges	69,466.37
Total\$	159,183,543.31
LIABILITIES.	
Common stock\$	34,004,058.00
Preferred stock	25,003,605.00
Bonds	81,875,300.00
Stock of subsidiary companies not	
owned	12,599.38
Current liabilities—	
Accounts payable\$ 823,481.21	
Drafts outstanding 288,484.07	
Meter and line de-	
posits 432,853.46	
Unpaid coupons	
and dividends 123,376.64	
Interest and taxes	
accrued 2,091,342.07	3,759,537.45
D	c =00 0c0 ==
Depreciation reserve	6,790,260.77
Insurance and casualty funds	150,639.46
Reserve account rate litigation,	1 040 201 50
1913-1917	1,849,321.50
Surplus	5,738,221.75
Total S	159 183 543 31



Co-operative Electrical Campaign Moves Apace

Second Get-Together Dinner Proves as Successful as the First in Evidencing the Spirit that Spells Results

The co-operative movement in the electrical field of industry was given a new impetus when three hundred and forty representatives from all branches of the electrical industry—the central station, the manufacturers, the jobbers and contractor-dealers—gathered at a dinner at the San Francisco Commercial Club on the evening of March 13th. The dinner was given under the joint auspices of the California Electrical Co-operative Campaign and the California Association of Electrical Contractors and Dealers.

Mr. Lee H. Newbert, chairman of the Advisory Committee, directing the California Electrical Co-operative Campaign, was toastmaster and introduced the

speakers of the evening.

At intervals between the courses of the dinner, and as a diversion during the speaking that followed, the assemblage was entertained by several songs by Mr. Cardinel, the French tenor, including the stirring national anthem of France, and by readings from the poems of James Whitcomb Riley and Rudyard Kipling by Mr. Bayard Robling. So popular were these two gifted entertainers that repeated encores quite upset the carefully prepared time schedule for the evening's program. Mr. Lowell Redfield directed the community sing in his own inimitable way.

After calling for a toast to the Nation's Chief, to which there was a hearty response, Toastmaster Newbert called the meeting to the consideration of the "serious business" of the evening.

Mr. G. E. Arbogast of the Southern California Association of Electrical Contractors and Dealers and vice-chairman of the Advisory Committee of the California Electrical Co-operative Campaign was the first speaker. He outlined briefly the progress of the campaign from its inception to the present time and its

plans for the coming year.

Heretofore the missionary work of the two field men has been directed largely toward bettering business conditions for the retail dealer along the general scheme of bringing all members of the different branches into closer working harmony. This year, with one additional representative in the field and a larger fund available for the work, an enlarged scope of

activity has been entered upon by which the good results thus far accomplished will be solidified and, it is predicted, equal or greater successes attained in the future in the betterment of business for the contractor-dealers, both as regards method and volume, and the tributary stimulation to the whole industry fhrough the increased demand for and supply of things electrical.

It was much regretted by all present that the next speaker, Mr. C. N. Banta, had not the time within the strict limitations imposed by an unusually full program to deliver his prepared address in its entirety. Fortunately, being written, it will be possible to secure the printed text in full, as it will doubtless be published by one of the electrical periodicals. His subject was "How Co-operation Affects Credits," which he handled in a way that commanded the interest and admiration of his hearers, his exposition abounding in graceful figures and allusions, the address ending with a pretty simile of a flock of geese flying in "V" formation and breasting a gale with united effort, the strongest in the lead, and each, by sheltering in a measure his leeward wingmate and being somewhat sheltered in turn by some other, exemplifying the spirit of co-operation.

Mr. Samuel Kahn, president of the Pacific Coast Section of the National Electric Light Association, traced the development of his association from the period when the National Electric Light Association had a membership composed almost entirely of central station men, and when, he said, a representative of that association would have spoken with "fear and trepidation" before such a mixed body of electrical men, because the feeling of kinship which electrical men now have for each other was then wanting and, in fact, a feeling almost of enmity might be said to have existed. Now the situation is quite different. The National Electric Light Association has a membership drawn not alone from the central station men, but also from the associations of manufacturers, jobbers

and contractor-dealers.

The meeting closed with an address by Mr. Charles C. Parlin, manager of the Commercial Research Department of the Curtis Publishing Company of Philadelphia. This, indeed, was a rare treat. The amazing feature of Mr. Parlin's address was the mass of statistical information gleaned by his corps of workers from all parts of the United States, the portrayal of which by means of graphic charts made the facts easily comprehensible. He predicted a great era of construction and industrial expansion following a period of a year or two years in which business, being in a more or less "plastic" state, will mold and shape its future destiny. This formative period, he said, will call for careful planning and intense direction of effort to place business on solid foundations for the future. He urged a much wider use of ad-

vertising by the electrical industry generally to educate the public in the matter of doing things electrically and to create a greater demand for electrical appliances of every nature.

He highly commended the California Electrical Co-operative Campaign on its work throughout the State and showed that the State of California in this regard, as in its distribution and per capita use of electric energy, stands pre-eminent among the States of the Union.

His talk was a great inspiration and encouragement to all who heard him, and all were agreed that seldom, if ever, had they attended a meeting from which they, one and all, derived so much of pleasure and benefit.

Plans for the Coast N. E. L. A. Convention

The electrical men of the Pacific Coast are looking forward to the coming convention of the National Electric Light Association, Coast Section, which will be held April 30th to May 2d, inclusive, at Coronado.

As before announced, a large attendance is assured not only because of the unusually interesting character of the papers and discussions to be presented at this Victory Convention but, also, because of the fact that the California Association of Electrical Contractors and Dealers and the Pacific Coast Electrical Supply Jobbers' Association are to hold meetings at the same time and place.

The transportation committee has been working overtime making arrangements for the accommodation of visitors from all parts of the country, and on the list compiled to date appear some distinguished names. Col. H. M. Byllesby, of Chicago, president of seven great utility companies, vice-president of three others and a member of the directorate of seventeen companies in all, some of which are Pacific Coast concerns, comes from the East to join with his Western brethren in their deliberations and to make the principal address at the Friday night banquet. Mr. John A. Britton from the Pacific Gas and Electric Company will be on hand as usual to present the report of the Public Policy Committee, easily the most important feature of the convention proceedings. Mr. Samuel Kahn of the West States Gas and Electric Company, president of the Pacific Coast Section, will be there, as will also Mr.

E. O. Edgerton, president of the California Railway Commission; Mr. A. E. Chandler, president of the State Water Commission, and many other men of importance in the electrical industry in California too numerous to mention here.

Most of the engineering papers tell the methods whereby the power companies have been able to care for war business without installing new plants. The paper written for the convention by Mr. C. H. Delaney of "Pacific Service" will deal with the use of pulverized California coal, presenting a comparatively new thought. An interesting discussion is anticipated on Mr. T. W. Simpson's paper on "Appliance Sales Policies."

The San Diego Consolidated Gas and Electric Company and the United Light, Fuel and Power Company will be joint hosts to the visitors from the north. Mr. H. H. Jones, manager of the first mentioned company, and Mr. William Clayton, manager of the latter, will act as chairman and vice-chairman, respectively, of the general convention committee.

As before stated, the convention proper will last three days and will close with a banquet on the evening of Friday, May 2d, at which Mr. William Clayton will act as toastmaster. There will be a special program of sports and entertainment during the week, and arrangements have been made to care for the entertainment of lady visitors. The attendance at the convention itself is expected to reach five hundred.

P. C. G. A. Men Meet in the Southland

By A. B. DAY, Vice-President Pacific Coast Gas Association.

The first 1919 "get together" dinner of the Pacific Coast Gas Association was held at the Alexandria Hotel in Los Angeles on Saturday evening, March 15th. Notwithstanding the storm which prevailed throughout California on Thursday and Friday of that week, several members from San Francisco and other cities in the northern part of the State motored to Los Angeles and joined the large delegation from the south, swelling the total attendance to 132, a turnout most gratifying to the officers and directors. The absence of John A. Britton and E. C. Jones, charter members of the Association, was noted with deep regret. Both of these gentlemen were unavoidably detained. The secretary, however, read a telegram of warmth and kindly feeling from Mr. Jones and a most interesting letter from Mr. Britton, which had the earmarks of having been written on the typewriter by that gentleman himself, although toward the close of the letter, apparently the typewriter, in desperation, was abandoned and resort had to the old-fashioned pen. Fred S. Myrtle was also absent, but he sent a volume of jokes by mail so that the members would not miss his usual entertainment.

Wm. Baurhyte delivered an address of welcome on behalf of the Mayor of Los Angeles, stating that in accordance with custom he should have presented the visitors with the key to the city, but, unfortunately, it was discovered that having been used so much lately the key was worn out. Interesting short talks were also made by R. H. Ballard, C. S. Vance, Frank Cressey and others.

Progress reports of interest were made by the chairmen of various standing committees, including the very gratifying report from Mr. Day of the Membership Committee that forty-one new members had been secured since the 1917 Convention; a statement from Mr. Pedersen of the Gas Exhibits Committee that at the coming annual convention it will be the plan to exhibit only unusual appliances and devices of interest primarily to the members of the industry rather than to the general public; and a report from Mr. L. B. Jones, of the Committee on Papers and Meetings, that most of the papers to be read at the next convention had been prepared and were ready for presentation. Both Mr. Day and Mr. Jones emphasized the fact that inasmuch as no convention was held last year on account of the war, all of the members should redouble their efforts to make the forthcoming meeting the greatest in the history of the Association, both in point of attendance and excellence of papers and reports.

The entertainment during dinner was furnished by dancing and singing girls. A very interesting part of the program were the answers given to questions regarding different phases of the gas industry which had been submitted by different members. These were read by Mr. Bostwick and were much appreciated and enjoyed. As the principal feature of the evening's entertainment, however, President Kuster announced the staging of a "bull" fight, in which opposing bulls—one from the North and one from the South-would step into the arena and fight with blasts of hot air descriptive of the advantages and opportunities to be found on their respective grazing grounds. At the sound of the gong the northern bull, C. B. Babcock, of known oratorical ability, appeared before the spotlight and soared into heights of poetic fancy as to the virtues of his happy hunting grounds. Unfortunately, however, he went too far, because when the southern bull, Paul Overton, came into the arena it was only necessary in order to win a decisive victory to point out that if the romantic tale of the northern bull was true, why, then, did he not remain more at home instead of making so many and prolonged trips to the virgin fields of the South?

One and all voted the meeting a most enjoyable affair and many resolved to make every effort to journey north for the second "get together" dinner at San Francisco in July.

CLOSING REMARKS

ON THE

VICTORY LIBERTY LOAN

TE are asked to pay for things that were never used; we are asked to pay for shells that never were fired; for cannon that never reached the battlefront, but we are asked to pay for those things that helped in a major way to bring this war to an end in 1918 instead of 1919. And the bringing of this war to an end twelve months before we could logically look for it means that we are asked to pay for saving the lives of 100,000 or 200,000 American boys who would have died on foreign soil had the war continued another year."

> -Extract from a speech by Hon. Lewis B. Franklin, Director War Loan Organization, U.S. Treasury Dept.

VICTORY LIBERTY LOAN

эннин он такжен такжен такжен такжен такжен такжен такжен такжен такжен такжен такжен такжен такжен такжен также



OUR"PACIFIC SERVICE"EMPLOYEES ASSOCIATION

The annual dansant held Saturday evening, April 5th, at the Claremont Hotel, Berkeley, was indicative of the college town spirit and surpassed all former parties given under the auspices of our Berkeley hosts.

The first out-of-town gathering of the Association for the present season took place at Sacramento on the evening of Saturday, March 22d.

The weather was pleasant and the outing was most enjoyable. Several parties traveled up from the shores of San Francisco Bay by automobile, so that there was an excellent attendance from the outside. Manager Charlie McKillip of the Sacramento District and his lieutenants worked up a considerable amount of local enthusiasm, and when the curtain rose upon the entertainment in Native Sons' Hall that evening the theatre had all the appearance of a first night.

The evening's program opened as usual with community singing, directed by Mr. Lowell Redfield. An address of welcome to Sacramento was delivered by our old stand-by, Captain George B. Baldwin. Chairman F. R. George told his audience of the aims of the Pacific Service Employees Association, and then came the Sacramento Chamber of Commerce male quartette in some excellently rendered

selections.

Cyril Dusenberry, a young man from the Yolo District who has on more than one occasion delighted "Pacific Service" audiences with his feats of magic, mystified the assemblage in truly professional style. The program closed with "The Ninety Thousand Girl," the little play which was the feature of the opening night of the season in San Francisco. Then, of course, came the dance, which held the floor until midnight. It was in every sense of the word a successful meeting and thoroughly enjoyed by all who attended.

There were other features of entertainment for the visitors. There was a basketball game in the afternoon in which the San Francisco team walloped the San Jose boys in hollow fashion, after which there was an informal "dutch treat" din-ner before the show, with some im-promptu stunts. The day following being Sunday there was an automobile trip out to Folsom power plant, where all the boys and girls had an opportunity to see the actual beginning of hydro-electric development in California for commercial purposes.

Mr. J. H. Pape, our jovial manager at Berkeley, after an enthusiastic address of welcome, turned the meeting over to his co-workers who entertained the visitors in a royal way, and every moment spent in the beautiful gardens or on the moonlit verandas of the hotel was enjoyed.

After the showing by representatives of the General Electric Company of that company's new motion picture film, the "Electric Giant," the evening was whiled away with dancing to the latest jazz music of our Pacific Service Orchestra.

At the regular meeting in San Francisco on Tuesday evening, April 8th, the leading feature on the program of entertainment was Mr. Ray Coyle, prominent artist member of the Bohemian Club, who had just returned from service "over there." Mr. Coyle had an unusual experience; for he was one of a handful of enterprising spirits who, after some service with the Red Cross in France, cast in their lot with the Moroccan Division of the French army of which the now famous Foreign Legion was a part. His experiences and observations made a tale of fascinating interest which was listened to by a large audience.

Another feature of the evening's entertainment was contributed by Mr. E. B. Henley, chief of the Land and Tax Department, in a fifteen-minute paper upon the work accomplished in that branch of "Pacific Service." It was interesting to those who attended to learn something of the intricacies of the department which deals with rights of way, leases of offices, real estate, warehouses and farming lands all over the "Pacific Service" territory. It is proposed to reproduce Mr. Henley's article in a forthcoming issue of the Pacific Service Magazine.

The jazz band was on hand with its inviting music, and the dance which followed the program of entertainment was

thoroughly enjoyed.

At the Sacramento meeting above referred to the news that Mr. Frank G. Drum, our company's president, had contributed a handsome silver cup to be awarded the winner of the basketball tournament was made public for the first time. Needless to say, the announcement evoked loud cheering. Elsewhere will be found the latest up-to-date details of this tournament contributed by our expert, Mr. Rudolph Jenny.

The members of our Association, both male and female, will soon have the pleasure of occupying the new Association headquarters which are being prepared for their use on the sixth floor of company headquarters, in San Francisco. The James Hugh Wise library is already being moved up to its new location and will be accessible to all members. It will be a great delight to have a suite of clubrooms available during leisure hours.

Word comes from the committee on women's affairs that the Y. W. C. A. work is succeeding beyond expectations. The women of "Pacific Service" who are members of our Association have taken up this feature of activities with enthusiastic interest and their share in the season's activities will undoubtedly exercise a most beneficial result upon the membership.

Speaking of membership, it is joyful to be able to record that we are approaching the one thousand mark. Had it not been for the war we should have reached that long ago.

Preparations are in active progress for a great out-of-town meeting to be held at Auburn on the evening of Saturday, April 26th. The good townspeople, headed by District Manager Herbert Cooper, are much exercised to provide for an unusual number of visitors and the attendance expected may reach five hundred.

There is to be a get-together dinner at the Masonic Temple early in the evening at which an informal entertainment will be provided by the girls of the Placer District; thence there will be an adjournment to the High School gymnasium, where a set program of entertainment will be presented. Mr. John A. Britton will be on hand to deliver the address of the evening. Other features of entertainment include a speech of welcome by Manager Cooper, recitations by Mr. Bayard Robley of the University of Califor-

nia, and vocal selections by the Sacramento Chamber of Commerce quartet.

BASKETBALL TOURNAMENT

At Sacramento on March 22d the San Francisco team won from the San Jose five by the score of 54 to 20. On the same day the Marin boys won from Alameda County by 20 to 9. The players who made the most work for the scorer were Citron, Duckell and Berts for San Francisco, Sturtevant for San Jose, and Manning, Kraft and Andrade for Marin.

On March 29th, the San Joaquin quintet, somewhat handicapped through the recent death of one of their players, Mr. W. E. Smith, journeyed to San Rafael and there met defeat at the hands of the Marin team by the one-sided score of 54 to 2. This was nothing short of a complete rout, yet the San Joaquin five are to be commended for their grit in not disturbing the playing schedule or forfeiting the game. The Alameda County team was host to Marysville, the latter team winning, 40 to 8. Johnson, Anderson and Hall scored most of Marysville's points.

On Saturday, April 5th, the San Francisco team traveled to Marysville, primed and figured to win. The Marysville boys, however, to everybody's surprise except their own, defeated San Francisco, 31 to 21. The same day found San Jose host to the Stockton team, whom

they defeated, 67 to 5.

The game held in San Francisco on Saturday, April 12th, was won by Marysville over San Jose, score 46 to 14. At Stockton, on this date, the San Francisco five won from San Joaquin in a league game, 61 to 3, and from Sacramento in a match game, 32 to 6. The last game was not a league game; it was arranged for Sacramento, who had formed a team too late to enter at the commencement of our tournament.

At the time this issue goes to press there is one more night to play, namely, Saturday, April 19th, when San Francisco plays Alameda County and Marin plays San Jose at Turner's Hall. In order to determine the winner of the cup presented by the president of our company, Mr. F. G. Drum, it will be necessary to play an elimination series. Announcement of the date will be made in due time.

 STANDING OF TEAMS.

 Won. Lost.
 Pct.

 Marysville
 4
 1
 .800

 Marin
 4
 1
 .800

 San Francisco
 4
 1
 .800

Marin	4	1	.800
San Francisco		î	.800
San Jose		3	.400
San Joaquin	0	4	.000
Alameda County	0	4	.000

News From Our Boys Now in the Service of the United States

[Gathered by the Honor Roll Committee.]

Licutenant E. N. Murphy has returned to civil life and is at present engaged in some field engineering. He is with a crew which is laying out a tract of about 10,000 acres of land for irrigation in the Anderson Cottonwood Irrigation District, Shasta County.

Licutenant Colonel George H. Canfield is now attached to the 11th Engineers and is stationed about 135 miles south of Paris. He is in charge of a large body of men making repairs on a French military road which had been badly shot to

pieces. The road will be repaired for a distance of about 270 miles. Colonel Canfield is operating five rock crushers and has with him 2000 men, 200 teams and twenty motor trucks. We have no information as to when he expects to return to the United States.

Sergeant Jesse W. Buzzell, formerly of the Land Department, has been discharged and on April 1st was transferred from the Land Department to Marin District.

Regimental Supply Sergeant Hans J. Hansen of the 319th Engineers was returned from Brest because of some bronchial trouble which he developed

in that foggy clime which, it seems, is a great deal damper even than the much-heralded fogs of San Francisco. Sergeant Hansen has been honorably discharged and on April 1st returned to his duties in the Electric Distribution Department of Oakland.

Corporal A. E. Ferguson of the Gas Defense School of Camp Lewis, has been honorably discharged and has returned to his duties in the Meter Testing Department of the Alameda County District.

First Lieutenant Clifton St. J. Hale, Company B, 38th Engineers, wrote to Manager John D. Kuster of San Jose, under date of February 26, 1919, as follows:

"General Pershing made an inspection of this base section starting this morning and finishing tomorrow night. My organization chanced to be one that he looked over quite carefully, so I had the pleasure of saluting the General, "sounding off" my name, rank and organization and walking at his side while he questioned the men and myself. It so happened that the Captain was ill and confined to quarters and so I was commanding officer and did the honors. The General was quite pleasant and as he had not hesitated in

the case of another lieutenant to 'mention' quite plainly certain things which did not suit him, I feel satisfied that our organization made a good showing. Our company has been in the S. O. S. the entire time. A special electrical unit, we got no chance to go to the front in spite of individual and collective efforts, so I will not bring home with me any blood and thunder stories of battles, but if my memory does not fail I will have some interesting things to tell provided I can find a listener, as I realize that before long 'war stories' will be passé. At present we are operating the electrical equipment here on the

be passé. At present we meers. (Formers Supply ct.)

be passé. At present we are operating the electrical equipment here on the American docks, but within the past few weeks 'business' has slumped due to the Army of Occupation being supplied through northern ports, so that augurs an early return.



Corporal John B. Dyer, "D" Co., 117th Engineers. (Formerly of Sacramento Supply District.)

Sergeant Crawford C. Hill writes touchingly and feelingly from Ceton, France, of the pleasant duties in connection with his work, which seems to be made up largely of inspections and preparations for inspections. We infer that Sergeant Hill does not expect to scrub any more clothes for some time after his return to the States, which will probably be this month or the early part of May.

Information has been received that Hector Keesling, formerly of Mr. Downing's office, has been promoted from first lieutenant to captain. Captain Keesling has just landed in New York on his way home from France.

Of the thirty-nine men who answered their country's call from the San Jose District, the following have returned:

S. F. Bailey, Ira H. Branch, Henry E. Brown, Lieut. E. F. Caldwell, Lorenzo Candello, Edward Fiman, Tony Stojanovich, Leo Burns, Edwin Erbentraut, Chas. Faulkner, Owen MacGregor, Lieut. Thomas A. Wright.

The first seven mentioned are once again attending to their duties under the banner of "Pacific Service."

The following interesting article reprinted from the *Berkeley Daily Gazette* is of particular interest to all of us. Thomas J. Mulligan, clerk in the Gas Manufacturing Department at the Potrero Station, is now out of the service and back on the job with "Pacific Service."

BERKELEY SAILOR CITED BY DANIELS

Yeoman Thomas J. Mulligan, son of Mr. and Mrs. Edward Mulligan of 1832 Vine Street, Berkeley, is one of forty-one members of the gun crew and ammunition party of the American tanker Frank H. Buck, commended by Secretary Daniels "for coolness while on duty" during an engagement with an enemy submarine September 1, 1918. He describes the battle as follows:

"We had left Queenstown on our first trip back when a strange looking craft loomed up and opened fire upon us. The shells went over our masts. Finally we made her out as a big German submarine cleverly camouflaged. We returned fire with a three-inch forward gun, but she was out of range and our shells only carried five miles. She was easily eight miles The captain of the tanker zigzagged around to keep the enemy from getting our range. They were good marksmen, though, for the shells hit our rigging and burst alongside. Finally we were able to get our six-inch aft gun into play. I guess we put over thirty or forty



Corp. Clement J. Carew, "G" Co., 35th Engrs., Camp Grant, Rockford, Ill. (Formerly of San Francisco District.)

shells, scoring several direct One of the shots silenced her fire and after another she was seen to plunge down. The lookouts said she went down too quickly to have submerged under her own power, so there was little doubt but that she was sunk. We had orders not to stop but to proceed, being a merchant ship, after an engagement with the enemy, so we went along without further delay after making a few repairs and cleaning up the guns.'

Mulligan's account coincides with the official report from the Navy Department, which gives the guncrew of the tanker credit for sending the U-boat to the bottom. Mulligan en-

listed in the Navy on February 1, 1918. He made a trip across the Atlantic on the U. S. S. Seattle and later rose from an ordinary scaman to first-class yeoman, still keeping his place as a gunner. While in training his crew competed for a prize at Hampton Roads and won first prize of \$20 to each member of the crew for scoring eight hits out of possible eight with a three-inch gun.

Extract from the Solano Republican, April 4th:

While a number of young men from here who are in the 363rd Infantry saw and experienced some of the worst battles in France another young man from this vicinity, F. A. (Dutch) Johnson, son of Mr. and Mrs. Ambrose Johnson of Fairfield, has had an experience that is equal to or probably greater than that of some of the other young men. The photograph of Johnson was furnished through the courtesy of F. S. Myrtle of the Pacific Gas and Electric Company, his employers previous to his enlistment.

Johnson is a member of the 37th Engineers and has arrived from France. The career of this young man in army life is interesting and the spirit with which he went into it is more than commendable.

At the time the United States entered the war, Johnson had not yet attained his majority. He wanted to get into the army and go to France, but was unable to get the consent of his parents. On the day that he attained his majority he enlisted in the Engineers, stating that he was will-

ing to bet he would see France inside of six weeks. Two days after enlistment he was sent east and within the six weeks he was on French soil.

His company was the first to cross the Rhine and the first troops to occupy German territory. They were on the firing front longer than any other outfit, having 150 days to their credit and service on every line of defense. They were in the thick of the action and participated in all the great battles which were won States after the United joined the allied cause. Before leaving for their return to this country they were stationed at Coblenz.

During this service Johnson was gassed and since that time has been compelled to wear glasses, his eyes being affected by the gas. His many friends in this locality join in wishing him a hearty homecoming and take great pride in the fact that he was one of our brave boys that offered his life for the sake of humanity.

"Pacific Service" is honored by the army record of one of its employees, as shown by the following clipping from the *Sacramento Bee* of April 5th:

WON CROIX DE GUERRE

Woodland (Yolo Co.), April 5.—Press dispatches sent out from Washington carried the tidings that Charles E. Altpeter is the first Woodland boy to return from overseas wearing the coveted Croix de Guerre for bravery. He is the grandson of Mrs. Catherine Altpeter. One week before enlisting he married Miss May Ethel Hildebrandt of this city.

Mr. Altpeter has just returned from eighteen months' hard service at the front with Company "G," where he was a private with the 363d Infantry. He was placed on the Division Roll of Honor of the 91st Division. He was formerly employed at the De Sabla Power House and left to join the service of his country on September 23, 1917.

The following was received under date of March 12th from Lieutenant Ralph O. Waltham, 166th Aero Squadron, Army of Occupation. Lieutenant Waltham was



Joseph A. Royster, Master Electrician, Co. "C," 322d Field Batn., Coblenz, Germany. (Formerly of Contra Costa District.)

formerly line foreman in the Alameda County District.

"I have forgotten just at what stage of the game I wrote you last but think it was from Joppecourt, which was the first stop we made in our 'fly to Germany.' We were there for six weeks, due to rotten weather and some one's indecision, and it was certainly a punk place, after the newness had worn off, particularly as the occupation by the Germans had not added a thing of beauty to the usual single-streeted little jerk water French village. The city of Treves is built chiefly on the east side of the Moselle, which is the first real river I have

seen over here and it is a really beautiful stream. The usual narrow crooked streets are here again, with sidewalks where they can be squeezed in. I imagine the old timers just built their houses wherever they pleased and left it up to the town engineer to figure out the street question afterwards. It is possible for the trolley people to think of curves in their lines. When they round a corner there is a decided angle in the trolley wire, which, of course, one of our trolley wheels could not negotiate. So they build their trolley poles after the shape of a letter "U," so that they can play across the angles in the line and always make a contact. It is surprisingly efficient, too, and makes almost no arc at the supports.

Our airdrome was the home of a Zeppelin originally. It is a good field but rather small for planes. The hangar is large enough to house at least one hundred and fifty of our busses.

"Everybody in the A. E. F. seems to be listed to go home except the air squadrons. Believe me, I am homesick, and the sooner they can get me to a place where I can look east to the Statue of Liberty the better I will be suited.

Lieut. D. G. Martin, formerly accountant at Vallejo, has sent to Pacific Service Magazine a copy of the official paper of the A. E. F. in Siberia, *Here and There With the 31st*, published "every once in a while" by the officers and enlisted men of the 31st Infantry "wherever it happens to be."

"Pacific Service" Roll of Honor



Employees Who Have Entered the Service of the United States

REVISED LIST AS OF APRIL 8th. 1919 Total Number -

GENERAL OFFICES—SAN FRANCISCO

Akerhielm, Fred
Allen, Randall Francis
Baugh, Sergt. Clive Everett
Behrens, William Henry
Bohnert, Lieut. Arthur M.
Bremer, Lieut. Arthur M.
Bremer, Lieut. Merl W.
Bucknell, Clarence E.
Butler. Joseph, Jr.
Buzzell, Sergt. Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass, Chester R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
Dreyer, Lieut. Walter
Dunne, Lieut. Edward A.
Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.

*Died of page Gray, E. L.

RAL OFFICES—SAN FRAI
Hammond, Everett E.
Hansen, Ernest Axel
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
Hill, Sergt. Crawford C.
Hornberger, Cecil Louis
Jones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis. Fred Charles
Lindblad, Lieut. Wm. N.
Lindstrom, W. J.
McDermott. Louis Wm.
McDonald, Hayward G.
Mel, Capt. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
Murgatroyd, Robert
Murphy, Lieut. Elmo Neil
Nordling, Wm.

Osborn, Lieut. Norris W.
Parker Charles G.
Regan, Arthur
Rossiter, Sidney Benjamin
Rubenstein, Frank Sam
Schuster, Lieut. John C.
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard H.
Sultan, Lieut. Walter D.
Terhell, Sergt. Jacques
Thomas, Lieut. G. M.
Trowbridge, Capt. Alfred L.
Trudrung, Harry
Watson, John
Wilkins, R.
Wilhelm, Clarence
Williams. Lieut. Leroy G.
Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January †Died of pneumonia in St. Paul, Minn.. October 14th, 1918. †Died of pneumonia in San Francisco, December 27th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry Anderson, Gorpl. Harold M. Barr, John Milton Anderson, Gorpl, Harold M Barr, John Milton
Barrett, George
Bates, Byron M.
Belford, William
Bennetts, Herman V.
Bertolacci, Ensign R. R.
Braemer, Lee
Bruno, Joseph
Call, Bert
Chandler, Sergt. Arthur E.
Clarkson, Fuller
Clayton, Oscar Fitzgerald
Cooper, Walter Haines
Cormack, Douglas Leslie
Cowell, Charles Merritt
Currier, J.
Deuschle, Fred W
Duceo, Daniel
Dupnoy, Max
Erickson, William
Fairchilds, F. C.
Ferguson, Allen E.
Forbes, Robert E.
Forbes, Robert E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D. Gay, Earl D.

LAMEDA COUNTY DISTRICHANSE, Sergt. Hans J. Henderson, John Thomas Hendricks, Normal Z. Hindman, J. E. Hoffman, E. J. Hoffman, E. J. Hughes, William C. Hunt, Lieut. Malcolm L. Jacobs, Sergt. Edward Jenkins, Harry R. Jensen, Chas. Christian Jones, Sergt. Ivor Keesling, Lieut. Homer Grant Kendrick, Eldon W. Kimefelter. Sam Knopla, Charles Knott, Chas. E. Larson, Harry Larue, Chester Walton Longo, Michael Luce, Sergt. George L. Maslin, Capt. Francis I. Massoni, Dante McKenzie, Malcolm M. Mills, Leon A. Morrill, Corpl. Lloyd M. Mosher, James Nelson, Nelson, Norcal CHICO DISTRICT Hansen, Sergt. Hans J.

Oswald, James
Parsons, James
Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
Pullen, Corpl. R. A.
Rowe, Sergt. John M.
Sahel, Alhert
Sanborn, Wilfred M.
Sandoval, Ensign Horace Ear
Shuman, D. L.
Sihbett, J. E., Jr.
Silvestro, Paul
Skoglund, Elmer
Smith, Stuart N.
Southerland, Lieut. Frederick J
Sprott, Bryan Oswald, James Southerland, Lieut. Frederi Sprott, Bryan Stephens, Alden Raymond Thompson, Clark C. Veirs, Harry D., Jr. Wagner, Ralph Otto Waltham, Ralph Owen Weeks, Anson Button, Jr. Whitehurst Leslie Whitehurst, Leslie Youngstrom, A. B.

CHICO DISTRICT

Curtis Ray E.

COLGATE DISTRICT Hunt, Edward C

Andrews, Crist C. Broyles, George R. *Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Raymond Carro Dusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E. Beaumont. Floyd Burton Boyd, William Thomas Compton, John A.

Johnson, Oliver Ray Mesgher, Francis Joseph Randall, Earl Roscoe *Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

Kelly, A. T. Knight, Lieut. Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kass, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L.

Reardon, Frank P. Royat, Wm. Boston Smith, Joseph William

Truitt, James O.

Mellerup, Fred H. Mess, Licut. Charles T. Netherton, Raymond Wayne Royster, Scret. Joseph A. Teachenor, J. L.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

Britton, Lieut. Emmet N. Hager, Charles W Johnson, Samuel T

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James. Ed. Judd, R. H.

Alstrom, Frank A. Brown, Ira A. Burkleo, Dan Butterworth, William Z. Corlew, Harland Hall Devlin, John A., Jr. Dickson, John Downing, Robert W.

Dallerup, Chas. DeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. *Borkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Goyne, J. J. Duane, Charles

DRUM DISTRICT

Lohse, Lieut. Marcel P Michael, John L.

ELECTRA DISTRICT

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. C. Martin, Jack H. McFadden, Edw. A. McKenzie, Ralph

FRESNO DISTRICT

Gomes, Carl Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold

MARIN DISTRICT

Johanson, Clarence M. Langford, Sergt. Clifford Mills, Russell

MARYSVILLE DISTRICT

De Rosa, J. Esenman, Paul G. Gayin, Harold J. Hefner, Chester H. Hefner, Joseph Philip Holdridge, H. Earl Holmgren, J. E. Hubbard, Sergt. H. W.
Johnston, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Maddeu, Thomas
McCabe, Alexander

*Killed in action on or about November 9th, 1918.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldoo, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William Young, Joseph P.

Meservey, Charles A. Pease, Howard

McMilin, Robert S. Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton Patterson, Sergt. A. Earl Ryan, R. Stearns, O. J. Stearns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

NAPA DISTRICT

Gash, Lieut. Frank Taylor

Beloud, Leon C.

Beveridge, James

Kent, James Cody

Earl, George

Mayfield, James M.

Osborne, Lieut. Butler J.

Snow, Wilbur Roland

Taylor, Albert P. Faylor, Lieut. Cary P.

Sutcliffe, Lieut. Harold T

Fairchilds, John H.

NEVADA DISTRICT

Snell, Verne C.

Richards, James

PETALUMA DISTRICT Jones, Claude O.

PLACER DISTRICT Leary, Jerry

REDWOOD DISTRICT

Anderson, W. O.
Boulware, Wm. F.
Bryggman, Emil W.
Budalich, Oialy A.
Gaussou, Jean
Gasey, T.
Chase, Corpl. H. A
Glausen, J. J.
Cullen, John P.

Deloy, H.
Fulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
Harcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.

Jennings, Edward J.
Johnson, Corpl. Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Lundquist, Leonard L.
Mengel, Henry

Peers, G. A. Raynard, Duncan Sampson, L. E. Sehhen, J. E. Smith, Corpl. R. F. Strofeld, George Thane, Alexander Uhlenberg, Louis H. Yost, Charles Z.

*Killed in action in France, Oct. 1st, 1918.

SACRAMENTO DISTRICT

Anderson, John L.
Anderson, Wm. Elmer
Baker, Joseph
Baldwin, Capt. George B.
Baugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest G.
Brady, Theodore
Brewster, G. V.
Brown, Jay G.
Bryson, Vincent G.

SACRAME Busses, George D. Cameron, John Coyle, William Doyle Crandall, Geo. H. Daigle, John M. Dick, Silas S. France, Fred Rhodes Hochderffer, W. E. Hornheck, John Chas. Johnson, William Max Klein, Earl Everett

Logan, Raymond M.
Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Nawien Ira J. Newington, David O'Connor, Edward T. Olsen, Albert Raymond, Harold A. Richeson, Merle C. Riggles, R. F.

Roach, Martin L.
Ross, Chas. Archie
Ross, Harold Lee
Sanford, Walter W.
Sartori, Adolph
Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
Stiewer, Winlock W.
*Surgett, Archie Dean
Williams Lester J. Williams, Lester J.

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.)

SACRAMENTO SUPPLY DISTRICT

Jackson, Claude E. Jones, Verne H. Kinz, William J.

SAN FRANCISCO DISTRICT

AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter Haiden, Walter Inteman, R. Jacobson, Earl D Keating, Arthur Edward Gilhuly, Aloysius M.

Koch, Carl Locke, Harry M. McKenzie, Alfred

Lindsey, Elroy M. Murphy, Thomas J. Suters, F. X. Wilson, Herbert E. Wilson, Reginald St. Clair

Barriere, Ernest

Arens, Frank Barker, Cecil B. Beach, Nelson James Bowers, Sergt Harold S. Francouer, Raymond J. Gewirtz, A.

Beeler, Joseph J. Black, Marion Derr, Harvey Dyer, Corpl. John B

SAN FRANCISCO DISTRICT-Concluded.

Collins, Geo. Washington Fitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Gonlisk, Lieut. Raimon F. Fitzpatrick, Lieut. Wm. E.

Addleman, Thomas L.
Adlen, Fred H.
Alland, Comer A.
Anderson, Sergt. Lyle Z.
Barker, Capt. Gny A.
Beatie. Gerald
Biehl, Lieut. P. F.
Brady, George B
Burnett, Walter
Butler, Sergt. Harry E.
Campbell, Sergt. M. F
Clark, Lyle G.
Cook, Frank L.
Cook, Frank L.
Cook, Joseph
Crompton, Walter James
Daley, Lieut. Rohert
Davidson, David
Dodge, Chas. P.
Donovan, Patrick
Drew, Harold
Durand, Milton J.
Eichbaum, Sergt. C. W., Ji Eichbaum, Sergt. C. W., Jr. Ellis, Clarence L. COLLECTION DEPARTMENT

O'Connor, Charles A. Oliver, Adrian Pierce

COMMERCIAL DEPARTMENT Garthorne, Sergt. George E. Horsey, Lieut. Joseph II. Leary, James E. Shea, Cornclius Thomas Sheehan, Peter Burnett

Tracy, Lieut. Grover S. Van Zandt, Wynant Zimmerman, Lieut. Elmer

ELECTRICAL DEPARTMENT

Estes, Sergt. Melville N. Fogalsang, W. J. Fowler, E. 11. Gardiuer, Harold Anson Gaston, Lieut. J. B. Gerber, Harold Gilbert, Paul H. Gilasson, Pearce
Griffin, John W.
Hagar, Capt. George H.
Hart, Lieut. Grover C.
Haughy, Corpl. Edward G.
Henion, Floyd
Hildebrand, Ernest
Honnef, Henry
Hull Sergt Roy I Hull, Sergt. Ray L.
Hunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Kobylinski, Walter

Locks, Herman J., Jr.

ABTMENT
Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Mcrkelbach, Corpl. Julius
Meyers, Afred Henry
Miller, Sydney Henry
Ogilvie, Clarence H.
Ostrowski, Ray
Parker, A. J.
Peterson. Ernest Andrew Ostrowski, Ray Parker, A. J. Peterson, Ernest Andrew Peterson, Ernest F. Pippey, William J. Pringle, Sergt. Alec. Rasmussen, Nels Goldman Robinson, Gordon Roche, Wilfred Patrick Roseberry, Edwin Bruce Scannell, Florence Scannell, Florence Schultz, Kurt William Seifkes, Sergt. Lane F. Shields, Lieut. Garrison F.

Siggins, N. J. Southwood, Emerson C. Spandau, Capt. R. D. Stohler, Adolph Stohler, Adolph
Sundberg, Emil
Sweeney Michael
Szczepanski, Edgar M.
Thompson, Gapt. A. R.
Thompson, U. H.
Thompson, U. H.
Thompson, Lieut. William
Turner, John McBurney
Upton, Albert M.
Valach, J. P.
Vargas, Virgil H.
Varney, Capt. K. Roberts
Wagner, Ililmor A.
Walker, R. J.
Walsh, Thomas W.
Waters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C. Wright, Howard C.

*Killed in an accident in France, September 17th, 1918. †Killed in action September 29th, 1918.

GAS DISTRIBUTION DEPARTMENT

Barry, Gail W. Buchella, Frank Close, Wm. Lansing Doherty, John Glennon, Joseph D. Gowans, Robert B. Hansen, John T. Johnson, Sergt. Albert Kemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl Richter, Herhert Rutledge, Arthur B. Schwartz, Joseph

Shea, Raymond Dennis Simon, Joseph M. Sullivan, Stephen Joseph Taylor, Mouroe Louis Walthers, Frank

*Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

Ambler, J. R. Black, John Doherty, James

Hallahan, Maurice

Hanley, Leo J.

GAS MANUFACTURING DEPARTMENT

Jones, Lieut. Dwight W. Lynch, John Joseph McCallum, E. A.

RECORDS DEPARTMENT Hughes, Percy Anthony

McSharry, Edward Stephen Mulligan, Thomas J. O'Hare, John Thomas

Perassa, Louis Polson, Edward

McDonald, Wm. John

Abercrombe, Corpl. Donald Andresen, Corp. Carl. Blair, Walter B. Clark, Richard Clark, William

Faight. Corpl. Forrest W. Flint, Lieut. Arthur P.

Argall, Marsden Stratton Bailey, Sidney F. Bigger, Clyde A. Billard, Wm. F. Branch, Ira H. Brewer, Lyman E. Brown, Henry Edward Burns, Leo Burns, Raymond J. Caldwell, Lieut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. Mix. Francis L.

Bischoff, O. E. Boots, Benjamin SAN FRANCISCO SUPPLY DISTRICT

Corbett, Allen Corbett, Victor Elliott, Gerald Equi, Johu Lang, R. T.

McCarthy, John McNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J.

Queirolo, Chas. Quigley, James L. SAN JOAQUIN DISTRICT

McIsaac, Dan Olsen, Melvin L.

Hunt, Lieut, Herbert Tevis Martin, Lieut. David G.

SAN JOSE DISTRICT

Candello, Lorenzo Candello, Lorenzo
Carroll, Louis
Chaboya, Wilbur Clarence
Charles, Lieut. Eugene H.
Coyle, Dan K.
Erbentraut, Edwin Otis
Faulkner, Chas. C.
Fiman, Edward F.
Frederickson, J. C.
Frier, George S. Frier, George S.

Hale, Lient. C. St. John Hall, Sergt. Evnns E. Harkness, T. J. Jensen, Elmer D. Johnson, Capt. Carl B. Kiely, Wm. P. Jr. MacGregor, Owen L. Maxwell, Merritte M. McFarland, Julian Menzel, Sergt. Robert J. Riley, Norman Sidney Young, C. Cuyler

Riesen, Alvin Rowe, Lieut. Ernest W. Roy, Harvey Leon Singleton, Paul Sprung, Lieut. Stanley W. Stojanovich, Touy Sucss, Walter R. Tarp, James P. Wight. Lieut. Thomas A. Wright, Lieut. Thomas A.

SANTA ROSA DISTRICT

Ross, Mervyn F.

SOLANO DISTRICT Moore, George R.

VALLEJO DISTRICT Argabrite, Licut. Walter M

YOLO DISTRICT Grandquist, K.

Morgan, Mervin E.

Short, Ralph C.

Howard, Everett J.

AUXILIARY ROLL OF HONOR

RED CROSS Curtis, Miss Letitia A. (Head Office)

Y. M. C. A. Traxler, Jesse E. (Alameda Co. District)

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - - MANAGING EDITOR A. F. HOCKENBEAMER - - BUSINESS MANAGER Issued the middle of each month

Published by the PACIFIC GAS AND ELECTRIC COMPANY at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

APRIL, 1919

No. 11

EDITORIAL

To say that the year 1918 was a strenuous one in the unusual burdens existing conditions imposed upon all classes and all peoples of the earth would be, no doubt, a commonplace at this time; nevertheless, it was the crowning point of the most momentous period in all history, and as such will be presented to the memory in various ways for many years to come.

Personal sacrifices were demanded not only of individuals, but of organized institutions as well. "Waste Nothing and Save Everything" was the general watchword and, speaking for the United States, it is to the great credit of her people that they heeded this watchword and, by so doing, reached the goal for which they were started more easily and more speedily than otherwise they could have done. For the average individual the problem was one of strict economy in every-day life. For the organized institution, particularly the public utility, the way was by no means easy sailing. In the industrial world the problems were many and difficult. Each industry had to be maintained up to the standard and, at the same time, in such fashion as to safeguard the interests of those whose money was invested in it.

A heavy burden then was laid upon the shoulders of the men at the head of the public service corporations. In view of these conditions, we trust we may be pardoned for calling attention to the record presented at the annual meeting of the stockholders of "Pacific Service" held this month at headquarters in San Francisco. The record, found in the reports of the General Manager and Treasurer,

respectively, was of special interest not only to the members of "Pacific Service" and those interested in its welfare, but to the public utility world at large, for it showed what could be accomplished by economy of administration hand in hand with departmental teamwork without which, of course, nothing of value could have been accomplished. stockholders were not surprised to learn of the enormous increases in operating expenses, the abnormal prices prevailing for all materials necessary to the proper conduct of the business—they were meeting similar conditions in the course of their every-day pursuits. They knew the difficulties that had to be met in the matter of labor, the scarcity of efficient help and the difficulty of keeping it. But they were gratified to learn that notwithstanding the many obstacles placed in the way of the management, "Pacific Service" had been maintained at the same high standard as always and, in addition, was able to show a profit for the year; a profit, moreover, that proved substantial enough for the executive committee to subsequently declare a dividend of \$1.25 per share on the common stock.

Mr. Britton's report was most interesting in its complete presentation of the facts and the means taken by the management to meet the problems encountered. Construction work has been confined strictly to war emergency work, and no new work had been authorized that did not have some bearing, directly or indirectly, on the Government's needs. Foremost in this construction work was the building of a 60,000-volt line from Colusa Corners to the Drum Line to connect our transmission system with those of the California-Oregon and Northern California power companies, completing the tie-in of transmission systems ordered by the Power Administrator for California in the early part of last fall. This line was put in operation in January last.

The extension of the Wise Power Line from its junction with the Electra Line east of Stockton to Mission San Jose is practically completed, and work on the 15,000-K. W. steam turbine for station "A," and additional boilers for that station and Station "C" in Oakland, is well under way.

A considerable reduction in the connected load was caused by the various war measures enacted by Congress and the United States Fuel Administrator and the State Power Administrator. A loss of 5,825,000 K. W. hours resulted from

the Daylight Saving Law, while a loss of 12,000,000 K. W. hours was the result of the lightless nights and the curtailment of certain industries and the restrictions placed upon building activities by the Government. In addition, considerable new business which might have been taken on had to be refused owing to the water shortage and the high cost of labor and material.

In the Gas Department an increase in sales of 718,035,500 cubic feet over 1917 is reported, due primarily to the economies practiced in this department during the year and to the energies of the sales force to promote the use of gas as industrial fuel. The street railway showed a gain of 714,911 passengers over With the elimination of jitney competition this branch of the company's activities should show further gains for the coming year. The gross revenue from the Water Department for the year from water sales was \$509,273.09. This department operates five pumping stations and irrigates, in addition, by a system of reservoirs and ditches, over 20,000 acres of land in Placer, Nevada and Butte Counties.

The activities of the various departments within the organization were dwelt upon by Mr. Britton in detail, and the creditable showing made by each one served but to emphasize the fact that the remarkable record made by the company during this trying period was only possible through the co-operation and loyalty of the personnel of its different departments. Of that loyalty on the part of each member of "Pacific Service" Mr. Britton spoke feelingly and to each and every one he gave his meed of credit for keeping our company up to its usual efficiency.

Mr. Hockenbeamer's report dealt with the financial end of the business and was also of great interest to the stockholders present. The second vice-president and treasurer showed that while the year's business was the largest in the history of the company, the cost of conducting the business was also higher than ever before recorded; notwithstanding this, however, quite a satisfactory surplus was shown for the year and the current financial condition of the company is regarded as excellent.

Still better things are hoped for for the year 1919, although the problems to be solved will be as many and as difficult, perhaps, as those of war times. But the snow is heaped upon the mountains and

the reservoirs are full of water, so it is hardly possible that a water shortage will trouble us this year, for which we can be thankful. Whatever else may confront us, whether it be those things we anticipate or something totally unexpected, will be met with the same spirit of "do and dare" that has ever marked the efforts of our "Pacific Service" family, and the standard that has been set and maintained through the trying times behind us will not be lowered.

The table of data on yearly output of the large electric companies of the country presented by the *Electrical World* in its issue of March 29, 1919, shows the Pacific Gas and Electric Company to be the eighth largest producer of electric energy in America.

The benefit of diversified loads such as are carried by our company, as compared with the loads obtainable in the large cities of the East, is strikingly illustrated by comparison of our yearly load factor of 63.1 with that of New York, which is 38.2, or that of Chicago, which is 43.5. In other words, to produce the same total amount of energy New York would have required 65 per cent more equipment and Chicago 45 per cent more equipment than our company. These savings are reflected in the low rates and very extensive distribution of "Pacific Service."

The Commonwealth Edison Company of Chicago carried by far the largest peak load of any company in the world on December 2, 1918, 400,010 K. W.

The *Record* of the San Francisco Y. W. C. A., in its Physical Education Number for 1919, publishes the following:

There aren't enough evenings on the calendar to provide hours for the special groups which request classes. One company which realizes what relation physical fitness and efficiency bear to each other, has taken scholarships for 125 of its women employees, and other firms are beginning to see the wisdom of this. These girls come Monday evening from 5 to 6 o'clock to the gymnasium, then go into the pool and have a swimming lesson. Another evening from 5 to 6 they play basketball, and expect to come forth with a splendid team in a short time.

It is with pride that we reproduce this paragraph, for the "one company" referred to is "Pacific Service."

Tidings From Territorial Districts

Alameda County District

John Chas. Jordan enjoys a little mystery. He says that he has given San Leandro more publicity than it ever had; in fact, he has advertised the town by simply visiting it on that now famous night. Charles recently had his desk decorated with a large branch of a lemon tree heavily laden with the fragrant and yellow fruit. Some one wanted to know who had handed him the lemon. He smiled saying they were Sunkist from San Leandro. "But whose son?" Mary Leal demurely asked.

The record of being more accurate than a cash register machine is held by Miss Mary Leal, cash receiver, Oakland. Miss Leal was over in her cash and was positive she had not made any mistake. The cash register people were called in and repudiated the thought that the machine could make a mistake. Miss Leal was sure and to emphasize her surety she boldly, yes rashly, said she bet a box of candy the machine was wrong. Of course young ladies don't bet, and especially Miss Leal, but she had to talk in language that was understandable. The register man was ready to back up his word and the reputation of his machine and Miss Leal found herself tied up in a wager. The machine was examined and the registerman's face began to flush. He began to explain that never since the machine first came off the ark had he seen the likes. It was a new machine just from the factory and had not been properly inspected. Miss Leal got the box of candy.

Charles Merritt Cowell is back to work as statement taker. He became instructor of guns and ordnance at Cleveland Ohio.

H. J. Hansen has returned to the drafting department. His transport was in the fleet with the steamer Otronto, which was torpedoed and 400 lives lost. It was a different experience than when in 1902 he was crossing to spend four years of study in Germany. On this last trip over a high sea came up and the coast con-

voys did not arrive for protection. He was detailed in France in charge of stores at a rest camp, so called because the stomach was given rest from food, so the boys used to say. He became regimental sergeant clerk.

F. J. Southerland is back to work, having served in the aviation corps at Fort Omaha. He says he was literally up in the air a good many times. His course was in balloon observation work. At the front the gunfire was directed from balloons. He obtained rank of second lieutenant, aviation section.

Bill Kelly went to the market to get a delicacy for the Sunday dinner. He said he had a hard time picking out either a duck or a good chicken. We don't know about the first, Bill, but why on the last?

The Universal Paper Can Company has installed a 2-h.p. gas steam boiler. The words "tin can" have been with us so long that we think of a can as being of tin. It is safe to predict that future cans will be of paper or fibre composition.

April 1st was observed by some of the younger set. Mrs. Edna Juanita Ottman was the recipient of a lovely box of flowers. Below the maidenhair was a heavy selection of onions and carrots. It was addressed in disguised hand. Her middle name was spelled with a "G." She became suspicious and insisted that several write out her full name to prove it was not their hand writing. This was done obligingly, and innocently the guilty one came through with the spelling, "Guanita." Edna is some detective.

The Pacific Service Employees Association reminds tennis enthusiasts that the Association courts and club house at Fifty-first and Shattuck Avenue are open and all employees are always welcome to use them.

Mr. Walter Ollerich of the Collection Department and Miss Caroline Christenson were married Thursday, March 27th, at the home of the bride's parents. We extend our best wishes to the newlyweds.

The accident prevention honor roll of the Alameda County District shows a splendid record on the part of department employees in maintaining a no-accident record. Special notation is made of the following: Electric Sub-stations, Foreman Geo. J. Wheat, no accidents, 3 years; Gas Distribution Department, Foreman P. Kenefick, no accidents, 2½ years; Station "C," Foreman H. Viers, no accidents, 3 years.

AL. A. MEDA.

ASK

Diagram Smith—where is the best place to get apples.

M. Heino-why they call him Hinky

Dink.

G. Hess—what the reading of the speedometer on his Fierce Arrow is.

Langkush—who led the band on Lib-

erty Day.

Cohick—if he knows how to put a clincher tire on a bicycle.

O. Brian—why he is sore at Grexton.

Botchie the Messenger—if he likes

Freddie Vogelsang—why they call him "Frieda."

Shannon—if he likes to collect N. P. orders in his own neighborhood.

Maddock—how he feeds his rabbits since the Dept. was motorized.

Wagner—if he ever fell in a barrel of "Dill-pickels," feet first.

Hood—if he knows what a wish-bone

on a Flivver is.

Madsen—how it feels to be 100 per cent

American.

Interpreter Ferretta—if they speak the

Interpreter Ferretta—if they speak the same Italian in Pittsburg as they do in Placerville.

Morris—what the price of nuts is now.

Inventor Doan—if Old Cutter is a good boat.

Neno Grexton—where is the best place to buy limes.

Trapper Doane—if Limburger cheese is good bait to catch wild cats with.

Bear Hunter Peterson—if he always sends his wife a telegram when he stays out late at night.

Alameda Sousa—when is the best time to dig clams.

Reliable Jacobs—if he is still Mayor of Jap town.

Dead Shot Hair—if he hunts decoys when duck season is closed.

Bastion—if he would rather work up above than down below.

Speed King Welling—why he doesn't like cops.

The Whole Gang—when is Mother's Day.

Åmborn—if rent is cheaper in Oakland than in Berkeley.

San Joaquin District

The Pacific Gas and Electric Company is extending 1500 feet of 6-inch C. I. water main along Eighth and West Sutter Streets in "The Homestead" to the vicinity of the Stockton Mineral Baths and the Patterson Glass Works for the purpose of fire protection and service in this locality.

The General Motors Company has publicly announced that it will establish a large branch of its business here permanently. It recently bought out the Samson Iron Works property and has purchased adjoining area on both sides of it for the enlargement.

The Cedar Products Company, which has been operating here during the past year, has concluded to build a permanent plant consisting of seven concrete factory buildings, dry kiln, power house and warehouses. The works is turning out wood for making pencils and will require 200 hands to operate the new plant.

Mr. W. E. Smith, foreman in the Electric Department, met with sudden death while playing a practice game of basketball at the Athletic Club building in Stockton on March 14th. The inquest disclosed that his death was occasioned by heart failure. The remains were taken to San Francisco for interment in the Masonic Cemetery.

One of the most important events for the benefit of Stockton that has occurred in a long time is the beginning to make subdivision of some of the Delta lands into small farms to be sold to actual settlers. "The California Delta Farms Corporation" has cut up the Orwood tract into small holdings for the purpose of attracting men who will make their homes upon them.

The Delta lands reclaimed from swampy wastes by the construction of

substantial levees and an elaborate system of drainage are exceedingly fertile and have heretofore been out of reach of the small farmer and only attainable by the expenditure of large capital and handled by large corporations. But by the cutting up and colonization of these tracts it will make an ideal section of this beautiful part of the San Joaquin Valley and sustain a large population.

J. W. HALL.

Solano District

As the company's business develops and new uses for electricity are found, the consumer becomes more and more dependent on continuity of service, and interruptions are a serious matter. Some of the most strenuous complaints come from electric range consumers, for it seems that where a man's stomach is affected he is much more concerned than if it were his pocketbook.

The following letter from Mr. C. E. Wyatt, agent at Winters, indicates how the difficulties of taking out a line are

growing:

"You may be interested to know something of the way it is necessary to figure out the best time to do work on the Madison line now, since we have so many consumers with different interests. the first place, with the range consumers we must be careful or we will spoil the dinner; the dairy men we must protect and not shut them off during milking or separating time; and those with the small domestic pumping plants and refrigerating plants have to be taken care of. I have one consumer in Esparto with an incubator, and that means twenty-one days between interruptions in service. Can you beat that? I may call on the Dixon force to come over some day to help me keep the eggs warm while we change a pole in the main line for the Mitchell extension."

C. E. Sedgwick.

Chico District

The northernmost cotton gin in the world commenced operation during the early part of this month. This opens a new era in the development of northern California.

The gin is located at Durham, seven miles below Chico, and will mill the product of 1000 acres of cotton grown on the Dodge ranch last year. Never before,

cotton men say, has the staple plant been produced as far north as Butte County, which lies between latitudes 39 and 40.

Fresno, which grows a little cotton, has heretofore been the northern extremity of the cotton belt, and lies between latitudes 36 and 37. The great cotton belt of the South and the Imperial Valley lies around latitude 34.

More cotton will be planted here this spring, and within another year it is expected that two more gins will be

erected.

The mill is what is known as a four-stand gin. In its processes it depends little on gravity, but principally on the vacuum principle. The cotton is drawn out of the wagons by a suction pipe and taken into a dirt separator. It is then blown into the gin stands, where swiftly revolving saws separate the cotton from the seed. Brushes take the cotton from the saws and pass it on to a condenser, from which it is blown into the press.

The seed drops into a conveyor, from which it is blown into a seed house. About every two days a carload of seed will be shipped to Los Angeles for manufacture into cotton-seed oil, and when the industry grows to sufficient proportions an oil plant will be established in

this vicinity.

The present cotton output of the plant is from thirty to forty bales a day. Power to supply the plant is furnished by a 50-h. p. motor.

H. B. HERYFORD.

Marysville District

The Trustees of Colusa have advertised for bids to cover the paving of several of the streets in that city. When this work is completed Colusa can boast of having practically its entire business and residence districts covered by paved streets.

A new hotel to be known as the Swank Hotel will be built in Colusa and ready for occupancy in the early fall. This new place will be first class in every respect. In addition to the hotel, a number of private residences are to be built, which in all will make the year 1919 the busiest building era in the history of the city.

Five gangs of men are working on the Zumwalt irrigation project and Mr. Zumwalt says he will have water in the ditches about April 15th. Over ten miles of ditches are being laid out by Zumwalt and some fine land will be well watered for rice crops this year.

Forty loggers left Oroville for the Swayne woods yesterday morning to begin cutting logs there. The mill will open on April 15th. Logs will be received beginning next week. Both sides of the mill will be operated this year, although the second side may open a few days later than the first.

The announcement that the Sunical Packing Company is to increase its capital stock from \$150,000 to \$250,000 is gratifying news to the people. This company has been the pioneer in the diversification of its plant in Oroville. The willingness of those who are interested in the company to increase their investment is evidence that the enlargement of the company's operations from olives and olive products to tomatoes, spinach, peaches, beans and other products has not been an unprofitable venture.

The plans of the company call for further growth. Eventually the cannery, which is being built upon the unit plan, will be double in size that of the present plant. The diversification of the pack is to be continued. The operations of the

company are to be enlarged.

Oroville taxpayers have proven that even if the purchase of the Exposition building by the city must increase their taxes this will not deter them from voting bonds for that purpose. The \$11,000 bond issue carried by a vote of more than seven to one.

The official canvass of the ballots by the city board of trustees following the count of the three election boards shows that 592 votes were cast in favor of the

bond issue to 78 votes against it.

The plans for the Honcut irrigation system should be sufficiently developed within a month or six weeks to permit the circulation of the petition for the organization of the district to be started, is the statement made by L. J. Abrams of Honcut, who has been in charge of the preliminary work of organizing the district.

District surveys which have been made under the direction of V. C. McCray, a civil engineer of San Francisco, are now nearing completion and maps will soon be ready showing the territory to be covered by the ditch and the location of the main ditch and laterals.

According to Superintendent W. C. Clark of the local Rosenberg Brothers & Company rice mill, the rice yet to be milled will take about forty days more. This will finish the work of milling until the 1919-1920 crop is ready to handle.

The city fathers of Marysville plan on completing the paving of streets that were included in the budget prior to the war.

The Onstott ranch, famous for its fine vineyards of seedless grapes, is likely to be converted into a tobacco plantation if experiments being made now by Glenn Onstott prove successful, as he has every reason to believe they will.

Onstott is preparing to plant thirty acres of his ranch to tobacco and has engaged two tobacco planting experts who will put in the tobacco plants. The tobacco plants which have already arrived

have been placed in a hothouse.

Recent days of sunshine have worked wonders in all the orchards and a bumper crop is promised in peaches, apricots and almonds. Cherries are coming into splendid bloom and so are plums. This year there is more moisture in the ground than for the last decade.

Experts place this year's yield of peaches from Sutter, Yuba and Butte as 25,000 tons. Last year the output was between 18,000 and 20,000 tons. Part of this increase is from new orchards. One of these is Judge Morrisey's five-year-old orchard on the McCune tract which is showing splendidly.

Marysville is justly proud of the basketball team from this district, and plans are already under way to receive the cup into the district. The last game played here, between the San Francisco team and the local team, was witnessed by a full house and all present were treated to a fast game of ball.

A good portion of the employees from Marysville attended the district meeting of the Employees Association at Sacramento and all returned home well satisfied with the trip and very proud of their membership in the Association. Royal treatment was received in Sacramento.

The young ladies from Marysville were

very much disappointed when informed that Charley McKillip was married. Tobey looked good to them, but they all agreed that he was too much a "newlywed." They even made Charley Young and Safety Hughes forget that their wives and babies were waiting for them at the kitchen door. If their wives knew all, they would be waiting with the rolling pin. But, Charley and Safety, we will never tell. Fred Myrtle, why did you keep so close to Mrs. Myrtle?

Thanks to the kind offer of Mr. and Mrs. Adams that the dance hall and accommodations at Camp No. 1 can be used, plans are under way for a picnic and dance to be held at that point on May 3d. The trip will be made by auto trucks and, needless to say, no one will get lonesome on the trip. This picnic will be under the auspices of the Pacific Service Employees Association and plans are to include the employees from the several districts. All out-of-town employees are welcome and can rest assured that room will be found on the truck.

Vallejo District

E. C. Johnson.

That Vallejo is on the verge of a boom which will last for several years is the prediction of the daily papers, and the reason for this is a good one, no doubt. Backed by the United States Government, as Vallejo and Mare Island have no labor strikes, the naval base is looming up big. As a starter, a \$2,500,000 appropriation has been recommended.

The old gas works down on Maryland Street is commencing to show some activity under Plant Superintendent S. A. Wilcox, who soon expects to have about 100 men on the job. In the neighborhood of \$40,000 will be spent by the company in doubling the capacity of the gas plant to meet the ever-increasing demands now arising in Vallejo, particularly at this time when the Government Annex is commencing to rent its hundreds of houses. Maryland Street will be some busy, as on one side of the gas plant is located the Bay Shore Laundry Company with thirty employees and four auto deliveries, and on the other side is the Vallejo Steam Laundry with seventy-five employees and seven auto deliveries.

Ray Dunshee, former accountant of the local office, has left to take up farming in the Santa Clara Valley. He has been succeeded by G. R. Meredith of the Napa District. Meredith says he would like Vallejo much better if he could find a house to live in. He and Miss Braghetta, the stenographer, commute from Napa daily. Houses for rent are at a premium in Vallejo.

Alvis E. Miller, for nearly six years an employee of the company as a meter man, has accepted a position with the M. S. S. Company, and Geo. R. Boyce of San Francisco District has fallen heir to the meter wagon.

The February "doings" of the Pacific Service Club were held at the home of Mr. and Mrs. Jeffers on Louisiana Street. After the business meeting all present enjoyed cards, games, etc., and then came the big eats. Honors fell to "Batch" Martell for the best sandwich. The popular salesman is good on the "Eats Committee."

The March meeting of the club was held at Redmen's Hall and at the business meeting Miss Canning resigned as president. J. W. Jeffers was elected, and promises to put some pep in the meetings. A committee has been appointed to arrange for a May picnic at Sequoia Springs near Napa.

Schools in Vallejo are still packed. The Lincoln School, which was originally planned for eight classes, now has seventeen teachers with the addition of basement and attic. Shift work is being practiced this term to accommodate the primary grade—one shift from 8 to 12 A. M. and the other from 1 to 4 P. M.

Vallejo is near the top in the Y. M. C. A. Drive. The ground has already been bought and preparations are going ahead for a fine big building for Vallejo. The Pacific Gas and Electric Company was on the list for \$300.

On March 30th the Government Annex was opened to the public for inspection. We noticed hundreds of gas meters, stoves and heaters on the way out there, which means that the gas plant may work overtime. The gas meters were all tested at the local warehouse by Storekeeper Victor Van Hemm. The cafeteria is one of the big features of the Government Annex, for the corporation representative, Mr. Linke, has secured efficient cafeteria management in the person of J. McBride,

for years steward at the famous Techau Tavern in San Francisco, and "Chef" Companion at the head in the kitchen. Companion was formerly chef at the Olympic Club, San Francisco.

L. C. Pomber.

Santa Rosa District

From the Santa Rosa Press Democrat, April 3.

WILL BLACK BOOTS FOR SALVATION ARMY Fund

Walter Nagle and Walter Agnew are to serve Ernest Cornett's barber shop as bootblacks Thursday afternoon for the benefit of the Salvation Army fund. They will shine your boots and take your money all for the one cause. No change may be expected. The entire proceeds of the shop and stand will be donated to the

Mr. Agnew is our accountant.

M. G. HALL.

Drum District

IN MEMORIAM

Drum District deeply mourns the loss of Mr. Leo R. Weil, who passed away in Colfax on the morning of March 8, 1919, after an illness of ten days.

As a member of our office force, he was loved and respected by all his fellow workers. His bright and congenial disposition added much to the harmony of our organization.

Mr. Weil had resided in the vicinity for nearly four years, having come to this climate for his health, where he continued to improve slowly until he was finally able to accept a position in our office. His home was in Oakland, where he formerly held a responsible position with one of the large banks of that city, and was later in business for himself in the same city. He often spoke of friends in the employ of "Pacific Service" in the bay region with whom he was well acquainted.

It is with a feeling of deep sympathy that we write these lines, and though it was not his privilege to remain with us long, his bright and cheerful spirit has left a deep and lasting impression

upon us.

Pete Mooney, one of the company's old timekeepers, died in Colfax after several months' sickness.

He followed construction work and was an expert powder and rock man. Whenever James Martin was put on a new piece of construction Pete would quit his job, wherever it would happen to be, to come back to the P. G. & E. Co.

He was 63 years of age and born in New York. He was with the company off and on for about eighteen years.

San Francisco District

Our Gas Sales Bureau has been cooperating with the dealers in constructive work in regard to gas appliances and in connection with this Mrs. D. R. Withers, Gas Demonstrator for this district, has been doing some very good work, which is attested to by the following letters from gas appliance dealers in San Francisco:

April 1, 1919.

Pacific Gas and Electric Co., 445 Sutter Street, San Francisco.

Gentlemen:

Please accept our very best thanks for the exceedingly instructive and highly pleasurable gas demonstration given by your very capable representative, Mrs. D. R. Withers, in our stove department, last week, for the benefit of our sales people.

Through ignorance a customer only too frequently blames the gas company or the stove dealers, for her troubles in the use, or, rather, misuse, of her stove appliance, or even when not actually in trouble, fails to appreciate the splendid possibilities of a gas appliance in the home.

There is, therefore, a great field for educational work in this direction, and knowledge gained through Mrs. Withers' talk to us will enable us to prevent considerable of our past troubles, besides greatly stimulating our sales force in their sale of gas appliances.

We feel indebted to you for this demonstration, and once again thanking you for same, we remain, sincerely yours,

> M. FRIEDMAN COMPANY, Per I. FRIEDMAN.

April 8, 1919.

Pacific Gas and Electric Co., 445 Sutter Street, San Francisco.

ATTENTION, MR. F. TALCOTT.

Gentlemen:

Mrs. Withers was here this morning and gave a very interesting and valuable talk to our sales people in the gas department.

We cannot help but feel that the information that she gave will be of benefit to all concerned, and we assure you the helpful co-operation given by your company to the dealers and consumers is doing a great deal of good. It seems to us that Mrs. Withers is exactly the right person to handle this work, as she gets housekeepers' viewpoints in a practical way.

Assuring you that we shall be pleased to work closely with your company in the future as in the past, we remain, Respectfully yours,

NATHAN-DOHRMAN Co. M. C. MEYER, Sales Manager.

The work of installing the transformers for a 150-h. p. additional load at the National Ice Company at Division and Kansas Streets has been completed.

Private C. H. Ogilvie, formerly of the Electric Department, is still in France, and writes that he anxiously awaits his return to California.

The Columbia Theatre is now being supplied by "Pacific Service."

Mr. Rush Dolson, Superintendent of Substations, is the proud father of a new girl at his home.

Probably one of the greatest events of this year and one of keenest interest to all employees of this company will be the debut concert of Miss Georgette L. Renault of our Chief Auditing Department, whom her teacher, Prof. Cl. Clare, will present at Scottish Rite Auditorium May 10th. The evening of our banquet of last June is still fresh in our memory, as on that occasion her voice charmed us with several selections, among them a

difficult aria from the opera of Il Trovatore, and at that time Miss Renault was complimented on all sides on her beautiful voice. But Professor Clare tells us that there is no comparison between Miss Renault's singing at the banquet and what she will do the night of the coming concert, so judging from this we shall surely be more than satisfied. Recently Signor Rondero Malpica of the Metropolitan Opera heard Miss Renault sing and at once predicted a very brilliant future for her.

IN MEMORIAM.

The following communication has been received from Mr. J. E. Murphy, of the Collection Department, San Francisco District, in reference to the death of Mr. Wm. F. Loughlan:

"We regretfully report the death of Wm. F. Loughlan, formerly a collector in this department. He commenced working for the company on May 10, 1883, and worked continuously for a period of thirty-three years, till he was stricken with paralysis in March, 1916.

"We knew Mr. Loughlan personally and can say he was a splendid fellow and was certainly a most loyal and faithful employee."

Head Offices, San Francisco

Lieutenant F. A. Koester has just returned from France after having served more than six months overseas.

He entered the service in training camp in May, 1918, at Camp Lee, Va., and after three weeks at this camp was transferred to Washington barracks, D. C. After five weeks' service at Washington barracks he was sent overseas with the 603d Engineers; afterwards transferred to the 29th Engineers, and later transferred to the 74th Engineers, the contingent with which he returned home. He has been discharged from the service and will soon be with us again.

Mr. Koester in his association with this company belonged to the line division of the general construction department, and he will return to the same branch of work.

E. H. STEELE.



Arc welding, adopted to prevent interruptions to war-time production from worn or broken parts, has been retained because of its proven economy and efficiency.



are Economically Made by G-E Arc-Welding Outfits

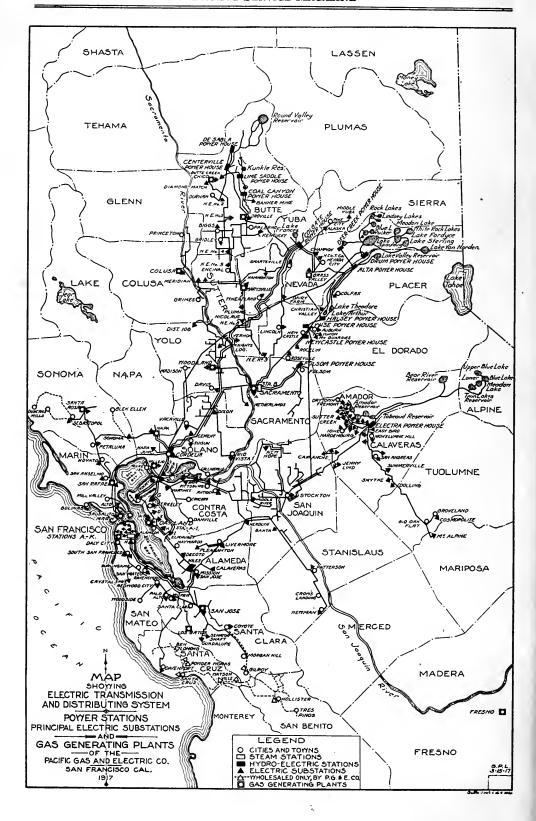
A BOUT 1% of the arc-welded tube ends in the tank shown leaked under first hydrostatic test. The leaks were easily welded tight, producing a tank that cost much less than a riveted tank and stayed oil-tight.

The above percentage is usual on a production of 4,000 boiler-plate tanks, involving a quarter of a million feet of arc welding.

This work is readily done by G-E constant energy arc-welding sets which assure a steady flow of metal into the weld at high-operating efficiency.

While your sets are being built by us send your welders and samples of your work to our school at Schenectady. We will gladly train your men to do efficient welding.





Pacific Gas and Electric Company Furnishes

"PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DI	RECTLY	INI	DIRECTLY	TOTAL			
	No.	Population	No.	POPULATION	No.	POPULATION		
Electricity	128	1,210,830	48	132,825	176	1,343,655		
Gas	51	1,219,690	2	8,600	53	1.228.292		
Water (Domestic)	11	57,302	8	19,300	19	1,228,292 76,600		
Railway	1	76,000			1	76,000		

CITIES AND TOWNS SERVED BY COMPANY:

		CITIES AND TO	WNS S	ERVED BY COMP	ANY:		
Place Por	oulation	Place Pop	ulation	Place Po	nulation	Place Po	pulation
¹Alameda	30,000	El Verano	400	MokelumneHill	300	San Quentin	2,500
Albany	2.300	Emervville	3.000	*Morgan Hill	750	San Rafael	6,000
Alvarado	700	Esparto	250	Mountain View	2,500	*Santa Clara	6,000
Alviso	550	*Fairfax	250	Mt. Eden	210	Santa Cruz	13,600
4-8Amador City	1.100	Fairfield	1.000	Napa	6,500	Santa Rosa	11.000
Angel Island	280	Fair Oaks	300	Nevada City	2,900	Saratoga	300
Antioch	2,000	*Felton	300	Newark	505	Sausalito	3,000
*Aptos	300	Folsom	2.000	Newcastle	950	*Sebastopol	1,950
Atherton	250	*Forestville	225	Newman	1,200	Shellville	200
*-*Auburn	2,800	¹Fresno	48.867	Niles	1,000	Sheridan	250
Barber	500	*Gilroy	2,900	*Novato	400	Smartsville	300
Belmont	375	*Glen Ellen	900	Oakland	225,000	Soquel	400
Belvedere	550	8-8Grass Valley	5.200	Oakley	200	*Sonoma	1.290
Benicia	2,400	*Gridley	1,800	*Occidental	600	South San	1,290
Ben Lomond	800	Grimes	350	*Oroville	5.000	Francisco	3,750
Berkeley	65,000	*Groveland	250	Pacheco	250	1-1Stanford Uni-	3,730
*Biggs	500	*Guerneville	780	1-1Palo Alto	6.000	versity	2,600
Bolinas	200	Hammonton	500	Paradise	500	1-1Stockton	42,000
Broderick	600	Hayward	4.000	Patterson	500	Suisun	800
Burlingame	4.000	Hillsborough.	950	Penn Grove	300	Sunol	340
Campbell	700	*Hollister	2,500	Penryn	250	Sunnyvale	1.650
'Capitola	275	-*Ione	1,000	Perkins	250	Sutter City	250
Cement	1.000	Irvington	800	Petaluma	7,500	- Sutter Creek	1,300
Centerville	850	*-*Jackson	2,100	Piedmont	3,500	Tiburon	350
Chico	15,000	³ Kentfield	500	Pike City	200	*Tres Pinos	300
*Colfax	500	*Kenwood	200	Pinole	1.800	Vacaville	1.250
¹Colma	1.800	Knights Land-	200	Pittsburg	6,000	3-8Vallejo	15.500
*Colusa	2,000	ing	400	Pleasanton	1.500	*Vineburg	200
Concord	850	Larkspur	2.000	Port Costa	1.000	Walnut Creek .	500
Cordelia	300	1-1Lincoln	1.500	Redwood City.	4.200	Warm Springs.	200
Corte Madera.	350	Live Oak	300	3-*Richmond	16,500	*Watsonville	6.000
-Cotati	200	Livermore	2,500	Rio Vista	1.000	Wheatland	500
Coyote	200	Lomita Park	450	*Rocklin	900	Winters	1.200
Crockett	3,000	Loomis	450	*Rodeo	300	*Woodland	5,000
Crow's Landing	300	Los Altos	500	4-8Roseville	4.200	Woodside	225
Daly City	5,500	Los Gatos	3.000	¹ Ross	900	Yolo	350
Danville	400	Madison	250	*Sacramento	76,000	¹Yuba City	1,750
Davenport	300	*Mare Island	500	San Andreas	750		,
Davis	1,700	Martinez	3,500	San Anselmo	3,000	-	
Decoto	300	² Marvsville	6,000	San Bruno	1,500	Total Cities	
Dixon	1.200	Mayfield	1.100	San Francisco	580,000	and Towns1	,422,522
*Drytown	225	Menlo Park	1,100	San Jose	45,000		
*Duncan's Mills	200	Meridian	225	*San Juan	550	Add Suburban	400 596
*Durham	300	Millbrae	300	San Leandro	5,000	Population	400,586
*- *Dutch Flat	750	Mills	350	San Lorenzo	400	-	
Eldridge	500	Mill Valley	3,200	*San Martin	200		
3-4El Cerrito	1,200	Milpitas	350	San Mateo	6,000	Total Popula-	002.400
Elmira	350	Mission San Jose	500	San Pablo	500	tion Served1	,823,108

Unmarked—Electricity only.
L—Gas only.
Cas and Electricity.

←Gas, Electricity and Water. ←Gas, Elect. and St. Railways. ←Electricity and Water. Electricity supplied through other companies.
Gas supplied through other companies.
Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	212,429
Number of Gas Consumers	
Number of Water Consumers	
Number of Steam Consumers	465
Total number of consumers	482,951

Operates 13 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.





You will find a National City Company Correspondent Office in 32 of the leading cities of the country.

Each of these offices is equipped to render unusual service to investors generally, and to bond buyers in particular.

BONDS . SHORT TERM NOTES . ACCEPTANCES

FORWARD with your faith

All honor to your faith in the symbols of law and order-the American institutions under

Faith-and bonds, build your Capitols, dig your Panama Canals, bring good roads to your doors, give schools to your boys and girls, play-

Your bond-buying habit vitally quickens the

Witness the greatest gain in human history, lately won through faith and high purpose, backed to a finish by your Liberty Bonds.

When you buy your Government, your State or your Municipal Bonds, you help lift your community to a higher, happier plane of living.

As a holder of such bonds, you enjoy an income from one of the safest-known forms of investment security Forward, then, with your faith!

The National City Company

National City Bank Building . New York





PACIFIC GAS AND ELECTRIC COMPANY

DIRECTORS

F. B. Anderson
HENRY E. BOTHIN
John A. Britton
W. H. Crocker
F. G. Drum

John S. Drum
F. T. Elsey
D. H. FOOTE
W. G. Henshaw
A. F. Hockenbeamer

JOHN D. McKee
JOHN A. McCandles
C. O. G. MILLER
NION R. TUCKER
GEORGE K. WEEKS

OFFICERS

F. G. Drum																			President
																			Vice-President and General Manager
																			Second Vice-President and Treasurer
D. H. FOOTE	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠	. Secretary and Assistant Treasurer Assistant Treasurer
																			Assistant Treasurer
CHAS. L. DARRETT .	•	•	•	•	•	•	•	•		•	•	•		•	•		•	•	Assistant Secretary

HEADS OF DEPARTMENTS

F. G. BAUM										Consulting Engineer
										Attorney
R. J. Cantrell .										Property Agent
J. P. Coghlan										Manager Claims Department
C. P. Cutten										Attorney, Rate Department
P. M. Downing .									C	Chief Engineer Electric Department
										Manager Land Department
JNO. H. HUNT										Purchasing Agent
J. P. Jollyman .										Engineer Electrical Construction
										. Chief Engineer Gas Department
F. S. MYRTLE										Manager Publicity Department
L. H. NEWBERT .										Manager Commercial Department
										Manager of Collections
R. R. REIDFORD .				•				٠		General Auditor
										Superintendent of Supplies
W. G. VINCENT, JR	٠.	٠	•	٠	٠	٠		•		Valuation Engineer

DISTRICT MANAGERS

DISTRICT	HEADQUARTERS	MANAGER
Alameda County		F. A. LEACH, JR.
Снісо		
COLGATE	Colgata	Mure Werry
Contra Costa	Morting	Don C Ban
DE SABLA		
Drum		
ELECTRA		
Fresno	. Fresno	(Acting) H. G. Ross
Marin		
Marysville		
Napa	Napa	C. D. CLARK
Nevada	Nevada City	L. H. HARTSOCK
Petaluma		
Placer		
Redwood		
Sacramento		
San Francisco		
San Joaquin		
SAN JOAQUIN	Con Took	I D V TIME
SAN JOSE		
Santa Rosa		
Solano	Dixon	C. E. SEDGWICK
	Vallejo	
Yolo	Woodland	J. W. Coons

Pacific Service Magazine

Volume X



Number 12

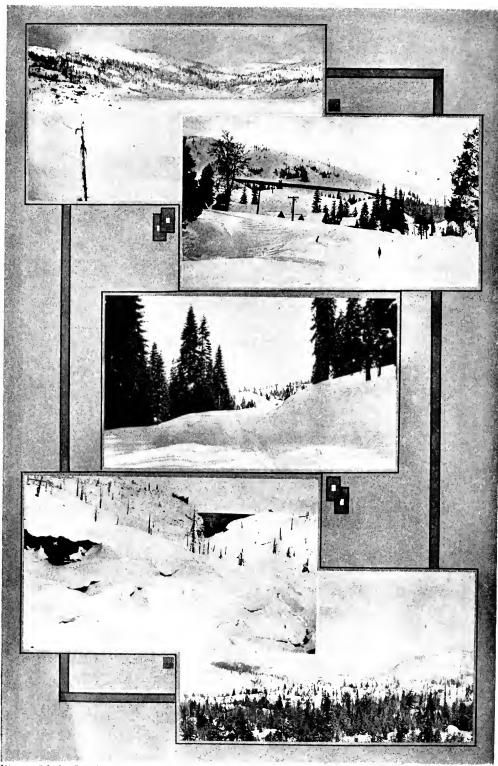
Yearly Subscription \$1.50 -- Single Copies, Each 15 Cents

Contents for May, 1919

WINTER VIEWS OF LAKE SPAULDING AND VICINITY	Frontispiece
MAINTAINING "PACIFIC SERVICE" AMID THE SNOW AND ICE OF WINTER	
Above and Beneath the Icy Surface of Lake Spaulding	H. C. Peterson . 367
VERITABLE SNOW BLOCKADE AT DRUM	L. G. Roberts . 370
CLEARING THE 60 K. V. LINES AROUND ALTA .	E. T. Erskine . 371
THE N. E. L. A. CONVENTION AT CORONADO	F. S. M 373
Some Impressions of the Convention	H. Bostwick 375
PROGRESS OF THE CO-OPERATIVE SALES CAM-	L. H. Newbert . 375
PUBLIC POLICIES FOR PUBLIC UTILITIES	
REPORT OF THE PUBLIC POLICY COMMITTEE .	John A. Britton 376
OUR "PACIFIC SERVICE" EMPLOYEES' ASSOCIATION	381
LAYING A SUBMARINE GAS MAIN	George Kirk 388
THE FINANCIAL SIDE OF "PACIFIC SERV-ICE"	A. F. H 390
EDITORIAL	392
TIDINGS FROM TERRITORIAL DISTRICTS .	394
THE "PACIFIC SERVICE" ROLL OF HONOR.	

Index to Advertisers

Allis-Chalmers Mfg. Co iii	Sprague Meter Co
Chaplin-Fulton Mfg. Covi	Standard Underground Cable Co
	Steiger & Kerr Stove & Foundry Co
General Electric Co	Welsbach Company ii
Graham Mfg. Co., Jas vi	Western Engineering Publishing Co
National City Company 4th page cover	Western Pipe & Steel Co. of California iv
Pacific Meter Co	Westinghouse Electric & Mfg. Co vi
Pacific Telephone and Telegraph Co v	Westinghouse Electric & Mrg. Co
Pelton Water Wheel Coiv	Wood, R. D., & Co



Views of Lake Spaulding and surrounding territory during the winter of 1918-19. The topmost view shows the lake with three feet of new snow on its surface; the next is of the upper camp at Spaulding, with seven feet of snow on the level. The fourth view is of the up-stream face of Spaulding dam. Other views were taken at points along the railroad between Smart and the lake.

Volume X

MAY, 1919

Number 12

Maintaining "Pacific Service" in the Sierra Nevada Amid the Snow and Ice of Winter

[The long winter season of 1918-19 is now but a memory. Spring sunshine is upon the land and the banked snows are fast melting from the Sierra peaks. But the winter from which we have just emerged will live long in the memory of Californians, particularly those who look to hydro-electric power to remove the stumbling blocks from the path of progress and development. It was a season of generous rainfall in the valleys and snowfall in the mountains and it came in the nick of time to save California from a most serious situation that was confronting her people. Thanks to it the threatened danger has been averted. The reservoirs are full

and from all present signs there will be no shortage of power this year.

Under the circumstances, it should be interesting to know just how a great institution like "Pacific Service," whose sources of hydro-electric energy lie among the highest peaks of the Sierra Nevada and its companion ranges, is maintained during the long months when travel by the every-day means of conveyance is impossible and a journey of a mile or so through the snow and ice is a considerable undertaking. We present, therefore, herewith a series of short articles by our company's representatives at various plants in the snowshed region and we venture to think they present in graphic fashion some of the problems that have to be overcome in order that the various industries which flourish in California, notably the agricultural industry that depends so largely upon water and electricity for its success, may be given their full share of these life-giving products in the long, dry months that are before us.—Editor Pacific Service Magazine.]

ABOVE AND BENEATH THE ICY SURFACE OF LAKE SPAULDING

To our friends who live in the cities and in the lower country the word "Spaulding" appeals as one of the most beautiful places to spend the summer vacation; where the air is the purest and the fragrance of the mountains the sweetest; where visitors can come with their automobiles, set up camp and enjoy hunting, fishing, rest and recreation to the utmost.

The winter, however, presents an entirely different scene. The scene is more beautiful perhaps, the air far more crisp, but the method of getting around very much different. One does not think of going in an automobile at this time. This would be impossible, for in the middle

of winter Colfax is about as far as one can come in this kind of conveyance. From here we take our skis and knapsacks and go by train to Smart, the little station far up in the snowsheds, well known to "Pacific Service" employees. We start immediately for Spaulding, a two-mile hike on skis, with snow probably ten feet deep. The day may be dark, with wind and snow and sleet blowing from all angles and "piling up" at the rate of half a foot an hour, or it may be clear and cold with a sharp north wind and crust on the snow. To the novice the trip would be hard indeed, but for the strong, experienced veterans of "Pacific Service" whose duty it is to main-



Drum penstock looking toward the forebay. Note camp buildings on the left. Four feet of snow,

tain service at all costs, these things are merely a part of the "day's work."

When we think of Spaulding our first reflection is, of course, of the lake, the father of all the lakes of "Pacific Service" on the South Yuba System; but we must not forget that down in the canyon beneath the dam, hidden under the huge rock cliffs, is a power plant built in the solid rock wall of the mountainside, which contributes its part toward the system and from which is built up the perpendicular slope a 60,000-volt line known as the "Alta-Spaulding 60 K. V.," which must be patrolled and maintained in the severest weather.

Some months ago many of our friends, no doubt, read a short item in the newspapers concerning the deep-sea diver who had been sent to Lake Spaulding by the company to go down and investigate conditions at the entrance to the outlet tunnel which seemed to be clogged with debris. The diver came, rigged his apparatus and went up down to a depth of eighty feet; but he did not stay long. The clear ice-cold water of Lake Spaulding was far different from that to which he was accustomed in the bay regions. He could not remain under water longer than fifteenminutes intervals, but after many unsuccessful attempts he was finally able to gain his objective, make an inspection and give a report on what he found, which was that the outlet had become partly clogged with limbs, small logs and other debris. Nothing could be done while the water in the lake was so high, therefore steps must be taken at once to lower it to a point below this



Operator's cottage at Drum Power Plant.



it was necessary to complete the work immediately as water could not be kept out of the Drum Canal longer than eighteen hours. The outlet was cleared and the work completed according to plan, but no one should

outlet tunnel so that men could get down there to work and clear out the rubbish.

This was not accomplished until the middle of March. When it was lowered to the required point





Views of Boardman Ditch running between Drum and Alta power houses. Upper view shows Ditch Tender patrolling on skis. Center view is of the ditch near Alta, and the lower one near upper end.

think for a minute that its accomplish ment was an easy task. Sixteen strong men were sent to help; their task was as hazardous a s that of the diver's though in a different respect. They did not have the water to contend with,



Front of Spaulding Power House. Snow drifted to a depth of about 15 feet.

but they had the perpendicular cliffs of the mountainside with their overhanging snow and ice down which it was necessary to go over one hundred feet to the outlet below, hand over hand by means of a strong rope fastened to a tree above. The snow and ice hanging overhead



During the work at Lake Spaulding men had to lower themselves over the bluff by ropes, a distance of 100 feet.

seemed to say: "I am ready to drop, but if you hurry I'll wait till you are through." Fortunately, it did wait.

And these are only a few of the experiences the "Pacific Service" men of the mountains endure with pleasure in order that our city friends may enjoy the many



Drum Ditch, just below Emigrant Gap road, shows snow hanging heavily on the bank.

comforts afforded through the use of electrical energy.

H. C. PETERSON, Accountant, Drum District.

VERITABLE SNOW BLOCKADE AT DRUM

To us of the mountains a winter is gauged by the amount of snow that accumulates, no matter how much it rains. Rain does not count; it comes and is gone; but snow means kilowatt-hours, and to us that is what makes the world go round. A man will "cuss" the mud



Drum Forebay. Gauge reading about 18 feet.

and rain, but it is very seldom that you hear the old-timer "cuss" the snow.

I know of no harder or more grueling task than a long trip through heavy snow. For instance, one of our operators one day this winter made the trip up the hill to Drum Camp, a distance of one and a half miles, with a pack on his back and skis strapped to his feet. It took him over five hours to make the trip, and if you don't think that was hard work try it some time and see. Your pack straps bite into the muscles of your shoulders, the rain and sleet cut your face, every time you step you sink a foot or eighteen inches and when you lift your foot you also lift the amount of snow that can cling to an eight- or nine-foot ski. When your trip is ended

all you want is to lie down and curl up. But what is past my understanding is that nine men out of ten prefer to make that trip than to put in the same time at some easy task in camp!

The total amount of snowfall at Drum power house this winter was 116 inches, maximum snow on the level 42 inches. In Drum Camp, at the head of our pen-

stock, the total snowfall was 170 inches, with a maximum snow on level of 79 inches. During the last week of February over six feet of snow fell at Drum Camp. This blocked the road to Towle, and it took two men and four horses several days to open it. In the meantime, the mail and light material and supplies were carried in on skis. At the present writing, April 7th, the snow has en-

tirely disappeared at the power house and is only in patches at Drum Camp. At Spaulding there is about three feet, but the hills and canyons above are well coated, insuring us an ample supply of water and kilowatts for the coming summer.

L. G. Roberts, Foreman Drum Power House.

CLEARING THE 60-K. V. LINES AROUND ALTA Maintaining the four 60-k. V. lines, three 2-k. V. lines and eight telephone lines out of Alta Power House in the winter is not the simple matter that it might appear to be. After a fall of from one to two feet of snow during the night daylight finds the wires weighted with snow to the extent of breaking good



Piltman Ditch Camp, Drum District.

locust insulator pins and splitting crossarms, besides causing the wires themselves to break.

Then the fun, or rather real men's work, begins. Automobiles, teams, saddle horses or even pack mules are out of the question. It is up to men and snowshoes alone for part of the trip, at least. The snowshoes are doped and in order and the men start out, loaded with wire, tools, ropes, telephone, lunch and a lot of pep, sinking to their knees in the snow at every step. If they could wait about three days the snow would be more solid and easier skiing. Turn about is taken at taking the lead to break trail.

The Sacramento-Alta 60 k. v. parallels the Southern Pacific Railroad and is close to it at several points, and after a couple of men have started patrolling from the power house if it can be learned that a train, light engine or snow plow is going west soon, a lineman or two will be found waiting at the Alta railroad station who, by promising a box of apples or saying they work for Jim Martin, will be allowed to ride to a point, depending upon how far they think the men taking the line from the power house can get. Sometimes previous arrangements are made by Mr. Martin for something to pick up the men and give them a boost in getting down the line.

After the men are clear of the line they may get a ride part way home, but most likely they will come trudging in some time before midnight, all in from bucking snow and facing a storm all day. When the linemen or ditch men of the Drum District do come in, the line is fixed or the ditch is open, even though the ditch men have had to work in water to their waists and the linemen have pulled wire up the side of a canyon in three feet or more of snow.

If the trouble happens to be on the Grass Valley-Alta 60 k. v. men go from the power house to Dutch Flat on snowshoes and then change cars to a saddle horse and ride to Bear River If the river cannot be crossed with a horse Colfax is notified and men are sent from Colfax up the ridge to patrol on the Grass Valley side of Bear River. In case it becomes necessary or advisable for men to remain on this section of the line late, they will find a shelter house which has been provided near the end of the Alta District supplied with provisions, line material, etc.

When a snowstorm is accompanied by a heavy wind it drifts so much snow into ditches that they block in spite of all that man can do. But this kind of a storm gives less trouble on the lines because this snow does not stick to the wires. Snowing at a temperature of about 33 degrees with no wind is when the wires become loaded until they, or rather the snow sticking to them, are six or eight inches in diameter.

E. T. ERSKINE, Foreman Alta Power House.



Mrs. Moore skiing on penstock line at Drum.



Buildings at Drum Camp.

The N. E. L. A. Convention at Coronado

The third annual convention of Pacific Coast Section, National Electric Light Association, was held at Coronado, April 30th to May 2d, inclusive. It bears the distinction of having been the most representative held since the section was organized. The conventions of the Electrical Jobbers' and Contractor-Dealers' Associations taking place concurrently with the major organization, the electrical men visiting Coronado had an opportunity to exchange ideas with representatives of every branch of the electrical industry.

The papers were diversified as to topic and of unusual interest. Perhaps it would be invidious to distinguish between so many able presentations of the various problems with which the electrical industry in California and elsewhere has to deal, but if any one paper in particular aroused more favorable discussion than another it was that presented by Mr. S. M. Kennedy of Los Angeles, on "The Man in the Street." This dealt with the public utility corporation as on trial before the court of public opinion. The utility, thought Mr. Kennedy, should keep a watchful eye upon the man in the street, who might be considered from five angles, namely, as impressionist, student, human being, customer and investor. Various ways of gaining his good will might be tried with effect. Among the points of good policy for the utility were suggested: appearing properties and equipment such as pleased the eye instead of giving offense to it; pleasant general offices, with neatly dressed clerks and a manager easily accessible to callers; a generous supply of accurate information concerning the production and distribution of electricity; voluntary inspection of installations and practical advice upon their economical operation; a thorough campaign of education to acquaint the man in the street with the actual facts concerning methods of operation and the scope of the public service commission's powers in regulating not only the charges for energy supplied but the actual conduct of the utility's business in most every department and branch; tactful, attentive courtesy displayed to every customer; in fact, the personal touch between producer and consumer by which the latter may be made to feel that he has a personal interest in the utility separate and apart from the monthly obligation to pay his bills for the current which he consumes, this latter idea leading up to the policy which has been already adopted by some of the largest corporations in the country and in which "Pacific Service" was actually a pioneer, namely, that of making the man in the street a full partner in the organization through financial interest by inducing him to become a stockholder.

The foregoing were among the high spots touched by Mr. Kennedy in his very able paper. It is to be presented in pamphlet form for distribution to all members of the section and such others as are interested in the subject.

Other papers of great value to the industry were presented to the commercial and engineering sections, respectively. Among the former might be mentioned "The Proper Training of the Sales Personnel," in which Mr. Lee H. Newbert of "Pacific Service" collaborated with Mr. I. W. Alexander and Mr. J. F. Pollard; also the paper presented by Mr. J. O. Case on the subject, "Means of Establishing Close Relations Between Architects and the Electrical Industry." The idea conveyed by the latter was that the electrical industry should take personal interest in the building of houses for the establishment of proper wiring facilities. On the engineering side Mr. Charles H. Delaney of "Pacific Service" was to the fore with a paper on "The Use of Pulverized California Coal," and Mr. Otto A. Knopp, also of "Pacific Service," contributed a paper on "Increasing the Revenue by the Watt-hour Meter." Mr. S. J. Lisberger presented some up-to-date ideas in a paper on "Kilowatts per Barrel of Oil; What Does it Mean?"

The address of President Samuel H. Kahn described the work of the section during the year that had closed and outlined the prospects for the future development of the electrical industry.

The business sessions of the convention were well attended and were remarkable for the keen interest displayd in all the problems discussed and questions raised. The resolutions committee took notice of matters of immediate importance, with the result that the set of resolutions presented and adopted at the closing of the session won the commendation not only

of the convention itself, but also of an important onlooker who went to Coronado for the purpose of seeing and hearing for himself. This onlooker was President Edgerton of the State Railroad Commission, whose address at the Friday night banquet is commented upon elsewhere in this issue. Among the subjects covered by the most important resolutions adopted were:

Electrification of railroads, the public interest demanding the conservation of crude petroleum for the derivation of distillates and lubricants and for use as a fuel only where other forms of power are not available; the extension of a spirit of co-operation to our Pacific neighbors, to the end that our increasing commercial and engineering relations with the countries bordering the Pacific Ocean may rest upon a more substantial foundation for the future; the establishment of a bureau of public relations, for the purpose of creating and maintaining a more friendly public attitude toward the electric utilities; an endorsement of the California Electrical Co-operative Campaign that has now been in full swing for about a twelvemonth; last, a resolution disapproving the proposed establishment of a system of ethics by the Bureau of Standards at Washington purporting to outline methods of operation, the fixing of rates and other matters that at present are within the jurisdiction of the public service commissions of the various States of the Union.

The piece de resistance of a convention such as that of the N. E. L. A. is the report of the public policy committee, and when this has been presented the culminating point of the convention's business activities has been reached and the rest is mere formality. The report of this year, presented, as usual, by our Mr. John A. Britton, dealt with the hydroelectric problem and the need for Congressional legislation to bring about a less restricted development in the West; incidental thereto, the need of help on the part of the regulatory bodies in the public land States for the purpose of impressing Congress with the necessity of immediate action in unlocking the doors so long closed to water-power development; the inauguration of a thorough campaign of education for the purpose of bringing the public into closer relation than heretofore with the public utilities that serve it. Various other recommendations of value were made in the report, which will be found in full text elsewhere in this issue.

At the close of regular business the report of the nominating committee was presented and the following were elected for the coming year: President, A. E. Wishon, San Joaquin Light and Power Corporation; vice-presidents, E. R. Davis, Southern California Edison Company, and Lee H. Newbert, Pacific Gas and Electric Company; secretary, A. H. Halloran, Journal of Electricity; treasurer, J. F. Pollard, Sierra and San Francisco Power Company. Executive committee: Arizona —R. S. Masson, Pacific Gas and Electric Company, Phoenix; Arizona Power Company, Prescott; Nevada — George Campbell, Truckee River General Electric Company; New Mexico-C. M. Einhart, Roswell Gas and Electric Company; Jobbers-C. C. Hillis, Electric Appliance Company; Contractors-dealers—F. Somers, Century Electric Company; Manufacturers - E. O. Shreve, General Electric Company; Central stations — William Baurhyte, Los Angeles Gas and Electric Corporation, Los Angeles; Henry Bostwick, Pacific Gas and Electric Company, San Francisco; S. M. Kennedy, Southern California Edison Company, Los Angeles; A. B. West, Southern Sierras Power Company, Riverside; Samuel Kahn, Western States Gas and Electric Company, Stockton; J. B. Black, Great Western Power Company.

Last of all came the banquet, which packed the large dining room at the Hotel Coronado to overflowing. Our lady visitors were permitted to share the feast with us, which made the affair more of a social gathering. Mr. William C. Clayton, vice-president and director of the Spreckels interests in San Diego and Coronado, presided and acted as toastmaster. An amusing sketch was presented entitled "The Passing of the Spirits," which took the form of funeral obsequies upon the dead body of John Barleycorn. The address of the evening, as before stated, was made by President Edgerton of the State Railroad Commission. He. like others who had preceded him at the business sessions of the convention, sounded the note of "Service." In brief, Mr. Edgerton's message to the convention was "Deeds Speak Louder Than Words."

Various recreations and amusements were afforded the visitors between sessions. Apart from being an enjoyable outing, the third annual gathering of the electrical men of the Pacific Coast was really worth while from the results that were obtained in the determination of a general course to be pursued during the

ensuing twelvemonth, not only to stimulate the electrical industry throughout the Pacific Coast, but to place it upon a firmer footing than ever before through a proper understanding by the great mass of American citizenship. F. S. M.

Some Impressions of the Convention

By HENRY BOSTWICK, Member of the Executive Committee.

It was the best ever, not only in the character of the papers which were presented, but also in attendance and good

fellowship.

The papers presented before the Commercial Section, as well as the Engineering Section, contained the last word as applied to this part of the country. commercial papers, viz.: Proper Training of the Sales Personnel," "How Can the Electrical Industry Assist the Architect in Serving His Clients?" "Selling the Idea," "The Problems of Electric Cooking and Heating," "The Contractor-Dealer of the Future," "Appliance Sales Policies" and "The Man on the Street" were all up to the minute and should be read and re-read by men of all branches of our industry to their material advantage, especially "The Man on the Street," which was presented by Mr. S. M. Kennedy of the Southern California Edison Company, and which will be presented in pamphlet form by the section for distribution to all members and such others as are interested.

I consider it unfortunate that the local section persists in carrying out the practice of the parent organization of holding separate sessions as between the commercial and engineering branches, and it will be my recommendation, as a member of the executive committee, to the incoming officers that this practice be

discontinued and that the convention hereafter be conducted by holding of one session and the intermingling of both engineering and commercial papers so that those of us who are interested in all branches of the industry can enjoy the benefit of hearing all papers read and discussed. From my point of view the commercial men have much to learn from the engineers and vice versa. After all, it is the commercial activities that keep the other fellows on the job; and while such a policy may necessitate the holding of an additional day's session, I feel that it will inure to the benefit of the membership as a whole. To my mind the greatest good to be accomplished by conventions such as ours is not so much the reading and discussion of the papers as it is that "shoulder to shoulder" and "elbow to elbow" touch that we get with the other men in the industry from all sections of the State and the opportunity of personally comparing notes.

With President Wishon now in the chair, and the type of men who have been selected to assist him in this work, I predict that the coming year will be one of extreme activity and I look for an era of prosperity in the electrical industry such as we have never heretofore enjoyed and in which Pacific Coast Section, National Electric Light Association,

will play an important part.

Progress of the Co-operative Sales Campaign

By LEE H. NEWBERT.

Regarding the Co-operative Campaign work, it might be in order to say that the chairman of the advisory committee submitted his report for fifteen months ending April 30th; that the same was received, filed, and a committee, of which Captain H. F. Jackson was chairman, was appointed to ascertain the views of a number of those in attendance at the convention as to the desirability of the campaign being continued for at least another year.

Just before the close of the convention

Captain Jackson reported for the committee. The report recommended that the central stations continue their contributions to the campaign for another year; also, that the work being done by the advisory board to establish more cordial relations between the several branches of the electrical industry in California, as well as to promote modern merchandising methods in connection with the sale of electric energy, was of decided advantage to the industry.

Public Policies for Public Utilities

Report of the Public Policy Committee, Mr. John A. Britton, chairman, before the Pacific Coast Section. National Electric Light Association, in convention at Coronado, California, May 2, 1919.

If there ever was in the history of our industry a reason, not to say an excuse, for the presentation of the report of the Public Policy Committee, the events of the year 1918 present such reason and excuse, on account of the abnormal conditions which existed throughout the United States due to its conflict with the Central Powers and the necessity for the exercise of every effort human ingenuity could devise to bring the war to a speedy close.

Electrical Industry Helpful.—In this helpfulness of patriotism none more signally distinguished itself than did the electrical industry, for it may safely be said that without its help and the cooperation of every generating and distributing company in the United States the marvelous wonders accomplished by all the arms of the Government and in its Army and Navy service would never have been realized. That this was the united policy of the public utilities speaks volumes for their patriotism, as during the greater period of the war the utilities suffered severely from war conditions, while practically every other industry in the country benefited.

On the Pacific Coast, where new impetus was given to shipbuilding, manufacture of aeroplane motors, and the intensity of agricultural production, the elements of electricity entering into the success of these war measures astounded the balance of the United States. Many dormant industries were awakened to new life. California found itself, by the researches of the Government and its agencies, possessed of minerals entering into the manufacture of munitions that had heretofore lain dormant, and not only to the nation but to the Pacific Coast States was added a wealth, not alone of money but of knowledge, that nothing but the crucial test of war could have so thoroughly developed.

Interconnection of Systems.—At the outset of this report your Committee desires to extend its commendations to the Railroad Commission of the State of California, and to the several public utilities of the State, for the particularly active, energetic and resourceful endeavors which they made to bring about the

most economical utilization of the generating plants of all of the public utilities of this State, not only hydroelectric but steam as well, and to the credit of these companies be it said that they acted under the direction of the Railroad Commission as a unit.

In the progress of the investigation of the question of interconnection of the several companies in the State by Commission and Government officials-Major George F. Sever of the War Industries Board and Mr. D. M. Folsom of the Fuel Administration—it was developed that the need of additional hydroelectric energy was painfully apparent. While this had been known to the operating companies of the State, and while every endeavor humanly possible had been made to have Congress pass such legislation as would relieve the shortage, nothing had been accomplished, the last Congress adjourning while just on the eve of passing a bill that, while not fitting and meeting all conditions, was nevertheless of a nature that would have to some degree encouraged further development. The shortage of hydroelectric power was accentuated by the abnormally low rainfall in the years 1916-1917 and 1917-1918, which seriously curtailed the output of the hydroelectric plants, and the situation was rendered still more serious because at the time when the Government desired to conserve as much as possible the uses of fuel oil for war purposes additional and increased amounts of fuel oil were essential for use in steam plants for the generation of power.

It has been estimated that the net results of interconnection existing and planned will conserve power amounting to over 100,000,000 kilowatt-hours per annum.

The diversity in the northern group was not so great as in the southern group. In the northern part of the State each of the companies operated at 60 cycles and there was no particular difficulty experienced in operating the entire network as a unit. This was not true of the situation in southern California.

The emergency of the war brought about a tie-in with the California-Oregon Power Company, which practically put in service the longest transmission in the

world. It is interesting to note in this connection that there remain but four small gaps to complete a continuous tiein over 2000 miles in length, stretching from Harlowtown, Montana, through the Pacific Coast States and down to the border of Mexico; thus is very nearly realized the dream of electric engineers of the Pacific Coast that at some day a bus bar from Oregon to Mexico might be constructed from which would be fed each of the systems involved, and the only limitation on such a project today is in the question of the limited economical capacity voltage at which they may be operated.

Productive Resources .- We have formerly spoken of the intensity of production in the Pacific Coast States in agriculture. The war demonstrated that what is needed is more production, and what the industrial worker wants is opportunity to take part in the great business of the world, and the more we can expand our productiveness the greater will be his opportunity for work. The lands to be reclaimed from the flood waters of our rivers on the Coast, and the application of irrigation to semi-arid lands existing, multiply their food-producing power and increase the productive possibilities of the country, and also tend to increase the demand upon our Central Stations and therefore urgently present again the question of more liberal terms by the Government in the occupancy of Government lands for the production of water power. Under the intensive electrification of lands, it is easily demonstrable that the Pacific Coast States alone, if they possessed the intensive cultivation foreign countries, particularly of southern Italy, could produce foodstuffs sufficient to feed the entire United States.

Unrest in Industry.—Confronting the country at this time is a vague feeling of industrial unrest, very largely augumented by fear. Is not one of the first steps necessary to improve this situation for us all to pick up our courage and resume active work of expansion? Should our development work be held back because the cost of money, materials and labor is more now than under pre-war conditions? These are matters which upon the scientific basis of regulation in effect in California should be, and we believe are, given consideration in the fixing of rates of public utilities by our State Railroad Commission. The principle of regulation is not to retard industry, but rather to encourage it. We need also the

recognition of the fact that the dollar today has less purchasing power than it ever had—good policy dictates that to keep the utility in a healthy condition it must have credit, and that credit can only be maintained by its power to earn a return which will enable it at all times to meet its every obligation, provide a surplus for proper return to its stockholders, provide depreciation reserves and by so doing stimulate it to renewed efforts of economical administration.

Participation.—Has not the time come when the workers in our industries must have opportunity to participate in the increment of their own labor? Participation is said to be the antidote to anar-As a step in this direction, the granting of opportunity to employes to become stockholders has been found to be effective. Stock purchase plans usually permit the employee to subscribe for a substantial block of stock, as compared to his monthly wage, providing for payment on the basis of small monthly amounts saved from his wages and allowing an actual participation by crediting to his account dividends on the full amount of his subscription, at the same time charging his account with interest at a lower rate on deferred payments. The industrial worker of today does not hold to the old socialistic desire for a division of wealth. He knows pretty well that if all the wealth of the country were divided equally the resultant amount to each individual would be only about \$2500 of invested capital, the interest upon which would be but a negligible annual amount. The principle of partnership and participation properly administered makes for loyalty, because down through the ranks to the last recruit hope becomes the inspiration, fear does not exist to impair efficiency, the square deal is recognized as every man's due, and interwoven with every day's work is the purpose ahead. The worker knows that his superiors are his friends, his colaborers are his partners and that within the organization are his present and his future.

Reward for Efficiency.—The public utility company, as well as its employees, should have opportunity to participate, if best results are to be obtained. The utility which through initiative research or design, or through wise, skillful and diligent management, has reached a point of such efficiency that it is enabled to improve its service to its consumers, to operate at a lower cost, and to more ad-

vantageously finance its requirements, should not be crowded into a position where it will be stripped of all the benefits of its performance, but rather should receive a recognition which would tend to put a premium on careful, economical and efficient operation. This would not only encourage capital but would hearten the employee by a recognition of his efforts. The regulating bodies must eventually recognize that the utility which is most successful is the one which can best serve the public.

Rates for Service.—Responding to applications of the public utility companies and to the suggestions of the President of the United States, the Secretary of the Treasury, and the Comptroller of the Currency and other Government officials that, as a necessary aid to winning the war, public utilities must be kept in sound financial condition, the Railroad Commission of the State of California has, during the past year, made numerous adjustments in rates for service, in the majority of cases by the addition of surcharges. This form of added rate was adopted to compensate for specified increased costs, in order that adjustments might be made from time to time if costs were reduced or increased, and in order that the whole amount of the increase might be readily eliminated when the cost of operation returned to the normal prewar basis. The effect of the addition of the surcharges has been to permit some of our member companies to obtain additional funds by the sale of securities with which to proceed with necessary developments which have been delayed due to shortage of men and money as well as the cost of materials.

Conditions.—Since the help given by the Railroad Commission to the public utilities, conditions of operation have suffered little or no change; wages remain at war-time prices, taxes have increased, and material and supplies of the character used by public utilities have not changed materially. The hope is ventured that the Commission may in readjustment of rates that will occur eliminate to a large extent the surcharge, which bears the impress of a war-time measure and therefore, now that the war has ceased, ought to be eliminated, and make such adjustments of schedules of rates as will compensate the public utilities to the same degree and help to maintain their increased efficiency. After all, it may be broadly stated that the success of the public utilities means the success of the State in which they operate. The relation of capital and labor is so strong that one cannot be divorced from the other, and as the public utility must recognize the reasonable demands of labor and must meet daily operating conditions by submitting to the laws of supply and demand on the question of materials, encouragement therefore in rate of return must be given so that it can be financed in the construction of the inevitable increases in its plants. It is only fair to say that most of the Railroad Commissions have been awake to the necessity for this action and have demonstrated it in the decisions rendered, often against ignorant public opinion.

Education.—To accomplish a feeling of security among investors, not only must there be the Commission action but also the education of the masses, and the education particularly of organizations that are formed for the purpose of contesting at all times, in and out of season, the reasonable applications of the public utilities for consideration of their conditions. The public utilities are not sufficiently alive to the necessity for this education. They spend money freely in the extension of their lines and in the securing of new business, but they do not get to the vitals of their interests when they neglect by the means within their power the proper education of the people, and while there has been a change for the better in respect to this in the past few years, the field is still comparatively untouched. Advertising to a degree accomplishes it, but better still would be the personal contact by heads of public utilities with the public in explanation of their difficulties and problems; also the education of the employees of the utilities in such a way that they would be able to discuss with the consumers properly the trials and difficulties, as well as the aims and ambitions, of the utilities. There should be in the public schools and universities of this State an education more extensive than at present given in relation to the public utilities and in the matter of motor-driven machinery, so that the consumers themselves would understand the general operation of systems and thus become more fully acquainted with what their demand upon the company means when reduced to a question of dollars and cents by the monthly bill.

In connection with this education of the masses encouragement should be given the educational service of both the National Electric Light Association and the University of California Extension, as recommended by the California Elec-

trical Co-operative Campaign.

Aside from the question of participation in the public utility by the employees thereof, there should be engendered very largely among the employees the feeling that the corporation is alive to the personal interests of the employees, in addition to their investment in its properties and participation in its profits. If this interest is displayed, by such consideration as one human being will give to another, it will help to break down a lot of the prejudices that exist, because an employee dissatisfied is spreading an unrest more effective against corporations than the utterances of those who preach the general proposition that "All corporations are soulless."

Re-employment.—Your Committee recommends, as a matter of policy to be adopted by all of the members of the Association, the re-employment of all employees who are inducted into the service of the United States, either by draft or by voluntary enlistment. In recognition of what these men have done in the service of their country, their old positions should as far as possible be given to them. If such positions have been abolished, they should at least be offered a position of equal importance. It is reasonable to suppose that the temperament of the men, by reason of their service, has been somewhat changed, and due allowance for this should be made, and while the Committee recognizes the necessity for the economical administration of every organization, the ambitions of men held responsible for economies should not be premitted to interfere with the proper restoration of the men.

The Future Considered.—The possibilities electrically on the Pacific Coast are boundless, not only in the productivity of electricity but in its extended use. There is no part of the world where its use is more general or more diversified. not an unusual thing to find in the homes of the farmers all of the conveniences that go with electrical development, from the electric range in the kitchen to the motor that supplies the water for irrigation of the farm. The average rate per kilowatt-hour at which energy is sold upon the Pacific Coast is less than that of any other section of the United States. This is partly due to hydroelectric developments and also to the greater diversity of use, and as soon as there is a relaxation by the Government of its drastic rules governing possession of public lands, so soon will arrive a lower rate for the benefit of the communities which we serve.

The help of the regulatory bodies in all the public land States is needed to impress Congress at its next session with the necessity for immediate action in unlocking the doors so long closed to waterpower development. Conservation of oil, while advisable, is not the only reason for action. Construction of hydroelectric plants, in nearly all of the streams, means reservoir capacities, and the triple purpose will be served of flood control, power and added water for irrigation.

The future of our industry on the Pacific Coast was never brighter. With the intensified education predominant here in the utilization of our commodity, and with a certainty of a proper return upon capital being given and with the lessons learned at this Convention respecting contact with the public and the consumer as well, it is certain that the demand for electricity will continue and increase. Not the least of this demand will arise from the installation of house appliances, particularly the electric range, which is now reaching a price and an efficiency that, with the low rate offered by the Pacific Coast companies, should make it a very strong competitor of the gas range, and its use should be further exploited.

In the reconstruction of the nation following the war, labor must be fully considered, and with the suggestions heretofore made and co-operation with labor there should be no difficulty in the adjust-

ment of all of our problems.

Legislation.—As contained in vious reports, your Committee strongly recommends to the companies a more careful consideration of its relation towards legislation. It does not mean by this that corporations should again enter politics, but it does mean that the corporations with millions of invested capital in this State should see to it that in a fair and just way they should be protected by such educational knowledge of the masses that the representatives in legislative bodies will have due cognizance of their rights, and therefore increase rather than diminish the tendency toward legislation that will be helpful. In the next two years steps should be taken by the companies to secure this position.

Municipal Ownership.—Municipal ownership is still rampant, under misguided and misinformed conditions. Much of

the spirit that engenders municipal ownership can be arrested, in the judgment of your Committee, by a policy of publicity that should be the same throughout the territory of the organization. Municipal ownership arises primarily from some misguided policy instituted by some public utility, in which an error of judgment on the part of the utility provokes the righteous indignation of right-thinking men, and the only relief apparent is in the service to itself by municipalities; and once this seed is planted there are plenty of people who, without due knowledge of what they are discussing, become rabid advocates, and people with no knowledge of the situation are generally led by such forces.

The underlying motives creating municipal ownership are twofold—first, dissatisfaction with the utilities' action, whether applied to the municipality or the public; and second, the misleading

statements of low costs of operation and large profits, which are contrasted with prices charged in other sections by privately owned utilities. Both of these fallacious arguments may be successfully met, if the public utilities will move with one accord on the first motive, and to destroy the second motive secure legislation which will provide at least for some responsibility which will cause the municipally operated utility to keep its accounts by the same methods that privately owned utilities are required to keep them. On the same basis of determined costs no privately owned utility need fear comparison with the publicly

The Committee in conclusion congratulates the Convention upon the work it has accomplished during the past year and wishes the continuance of that success for the year to some.



READERS OF PACIFIC SERVICE MAGAZINE, TAKE NOTICE

This number is the last of Volume X, and, as has been done in the past, each district office will be supplied with a bound copy for the office library.

Those who have all the copies of Volume IX, or of any previous volume, in perfect condition, may have them bound by forwarding them, charges prepaid, to the Stationery Department. The charges for binding will be ninety cents per volume, and remittance must accompany magazines. Forward magazines and make remittance to

STATIONERY DEPARTMENT—Pacific Gas and Electric Company, 445 Sutter Street, San Francisco

Name of sender with full and complete address must be plainly marked on each package.

No magazines or remittance will be accepted after June 20th.



PACIFIC SERVICE"EMPLOYEES ASSOCIATION

Representative John H. Potts, a rough diamondEd. A. Weymouth Miss Agnes Macpherson, Everett's aunt.....

пинанизмичения политичний пинанизмичения политичного п

It would be invidious to draw comparisons as to the merits of the acting. The cast was carefully chosen, and all displayed real ability in their respective roles.

Dancing closed the proceedings.

To the Placer District on the evening of Saturday, April 26th, fell the honor of entertaining the members of the Association, their families and friends. turned out to be a phenomenally successful gathering, which reflected the greatest possible credit upon the Placer Dis-Manager Cooper and Superintendent C. R. Gill had worked with a will to make the affair one which would be remembered in days to come. The local journals were interested, and the prominent residents of Auburn and vicinity, with the result that the turnout was not only large but representative.

When the magnitude of the affair became known to the people of Placer County, many of them volunteered to assist in any way possible, and all extended helping hands. Many automobile owners offered the use of their cars, merchants decorated their show windows and places of business and assisted in many ways. The hotels also helped greatly both in caring for the crowd and in preparing the dinner, while many of the guests were entertained in private homes.

Several days before the meeting it was known that the out-of-town attendance would be beyond the capacity of the dining rooms of the local hotels, and as it was desired to assemble all the guests for a get-together dinner, recourse was had to the banquet room of Masonic Hall. This was truly an enjoyable feast. its conclusion the assemblage adjourned to the gymnasium of the Placer Union High School, the use of which had been

At the meeting of the Association held in Oakland on the evening of April 22d, the Pacific Service Players' Club made its second appearance before a packed house. From the enthusiasm of the audience it was evident that the production of these plays, with casts selected entirely from the membership of the Association, has stimulated interest in our meetings to a remarkable degree.

The program of the evening was started by the Pacific Service Orchestra. By the way, the orchestra is rehearsing diligently Monday afternoons at 4:45 o'clock at 445 Sutter Street, and a marked improvement can be noted in its work. Three numbers were presented by the orchestra under the able direction of Arthur Garcia. one of which was a saxophone solo by Mr. Heuter. These numbers were very well received indeed. These selections were followed by a rousing community sing under the direction of Mr. Lowell Moore Redfield. Following the community singing, Marie Hughes Macquarrie, harpist, rendered several beautiful num-

The next number on the program was Mr. Jean Cardinal, French tenor, who delighted his audience with some recent popular songs. Mrs. Redfield ably accompanied him.

Then came the piece de resistance, "His Model Wife." The announcement card stated that the play was a delightful comedy of humor and good cheer, and it did not overstate the facts in the least, as every line was full of sparkling wit and humor and was well presented under the able direction of Mr. Frank L. Mathieu.

The scene was one of an artist's studio. The artist was pictured, as usual, in rather straitened circumstances attempting to give an afternoon tea. The party was thrown into confusion by the announcement of the arrival of a rich aunt of the artist, who was under the impression that her nephew was married. Amusing situations developed thick and fast, terminating, very properly, in a happy situation all round. The cast was as follows:

Arthur Everett, an artist......R. W. Du Val Robert Parks, his chum.....Jesse Marshall



At Sacramento, Miss Brandt, leading lady, and a gentleman who bears the same family name.

kindly donated by the High School Board for the occasion. More than six hundred persons were in attendance.

The program began promptly on time. The first number was the usual community singing, led by Mr. Lowell Red-Then followed the principal address of the evening by Mr. John A. Mr. Britton's address was instructive to the Association members, and was thoroughly enjoyed by all present. Other numbers of the evening's entertainment included vocal selections by the Sacramento Chamber of Commerce quartet, and a number of recitations by Mr. Bayard Robley of the University of California. At the close of the program the floor was cleared for dancing, the music for which was furnished by the orchestra of the Association.

At the entertainment and dance souvenir programs were given out, which were not only very artistic but contained much valuable information as well.

On Sunday morning an automobile trip was made to Acolia Heights overlooking the American River Canyon, Lake Theodore, Halsey powerhouse, Rock Creek multiple arch dam, and the Wise powerhouse. An operating exhibition was held at Wise, demonstrating the actual per-

formance of increasing and dropping load, separating and paralleling the generator with other generating stations of the system. Later in the day the visitors left for their respective homes, all very earnestly expressing a desire to "come again."

The committee in charge of the entertainment was comprised of the following: General committee, H. M. Cooper; publicity. George Smith: invitation, C. R. Gill; reception, Ethel Heiple; accommodation and transportation, Tim Burke; program, W. M. Roberts and P. M. McErlane; entertainment, W. E. Lininger; information, H. F. Flynn; sightseeing, Al. Dixon; athletics, George T. Tobey.

The usual monthly meeting was held in San Francisco on the evening of Tuesday, May 13th, when the star feature on the evening's program was an address by the Rev. Edward Arthur Wicher, a divine who presents a fair example of muscular Christianity and who hails from Marin County. A little over a year ago Mr. Wicher left his parish to do his bit at the war front, and right nobly he did it. He was one of the very few Americans who were permitted to enjoy active service on the battle line in Egypt and the Holy Land. He went through the campaign that was so ably conducted by General Allenby that resulted in the capture of Jerusalem. He had many personal experiences. The ship he crossed the Mediterranean in was topedoed under him with large loss of life. He sailed more than once over the enemy's lines in a scouting aeroplane. He did much for the service besides his prefessional duty of preaching to the boys. He probably knows more about General Allenby and the victory in Palestine than any war correspondent. Consequently, it was a great delight to have him stand before us and tell us in his own simple way a few of the things that happened over there.

The "Pacific Service" Orchestra was on hand as usual to open the evening's entertainment. This orchestra, by the way, is a permanent organization, composed of the following members: A. Garcia, violin; H. Keesling, piano; E. Flynn, banjo; E. Heuter, saxophone; G. Beck, bass; L. Melbourne, drums and traps. Several numbers were furnished by the "Pacific Service" chorus of women. Among these may be mentioned "The Beautiful Ohio," with solo by Miss Zita O'Connor; "Until We Meet Again," solo by Miss Edna V. Horn; "Chasing Rainbows," violin obbligato by Arthur Garcia;

"My Little Birch Canoe" and "Hindustan," the two last named with a special dance feature by Miss Jorgensen, a young lady who had previously delighted "Pacific Service" audiences with her terpsichorean art. Another vocal feature was furnished by Mr. W. F. Meyers of Sacramento, who in a phenomenal basso rendered several selections with great effect. His "Armorer's Song" recalled pleasant memories of Eugene Cowles and the Bostonians.

An amusing number on the program was the appearance of a returned soldier named Morgan, of the Coast Artillery, who apparently extracted soulful music from a common handsaw. There appeared to be some mystery about this performance, which made it all the more interesting.

The program, as usual, closed with a dance.

The next entertainment feature, scheduled for the evening of Tuesday, May 27, at Oakland, is to be managed and run by the women of "Pacific Service." the speakers are to be of the fair sex. Here is a great opportunity for the disgruntled male to make himself heard on the subject of women generally and their ability as speakers. Needless to say, a tremendous interest is being taken in this meeting, and we hope to have much to say about it in our next issue.

The Oakland meeting will close the Association's activities for the first half of 1919. The annual dinner, for which active preparations are in progress, will be held in San Francisco on the evening of Thursday, June 19th; with that exception, all the other activities will be confined to out-of-door picnics. The summer vacation will extend during the months of June, July and August, the annual outing being scheduled to take place some time in July. Indoor activities will be resumed with the meeting in San Francisco on September 10th.

President Fred George announces the appointment of Mr. V. R. Hughes, our Safety First Engineer, as chairman of the benefit committee in place of Mr. E. A. Weymouth, who has left the company's service.

BASKETBALL TOURNAMENT CONCLUDED

The Association's basketball tournament has come to a successful conclusion. Since our last issue went to press, the final night of play was reeled off in San Francisco, Saturday, April 19th. On this date the San Francisco team engaged the Alameda County quintet, whom they defeated by a score of 60 to 5. The Marin boys emerged from their fray with San Jose victors by a 19 to 12 score.

With these games the tournament concluded, and the Marysville, Marin and San Francisco teams were tied for first place. An elimination series to determine the winner was necessary, and on May 1st the Marin and San Francisco teams clashed in the semi-finals at San Francisco. In an exciting and well played game, Marin won the right to enter the finals by a score of 26 to 12.

On Saturday evening, before a large and enthusiastic audience of basketball fans, the Marin five played Marysville for the championship. In one of the closest, hardest fought, yet cleanest and best played games ever staged in San Francisco, so expressed by all present, the Marin boys in the last minute of play threw the goal necessary to win by a 21 to 20 score, after the up-country five had held the lead throughout the game. Excitement was intense, and some fine basketball was played by both teams. The closeness of the score indicates how little advantage any one team had over the other.

The Marysville team entered a protest on the ground that Captain Akers entered the court while not in the game, and on the eligibility of player Kraft of the Marin team. The first question was ruled upon in Marin's favor by the Pacific Athletic Association, but the protest concerning the eligibility of Kraft was allowed. The latter point was decided by a committee of three from our organization. Therefore the game has been ordered replayed by our athletic chairman on the evening of June 7th at San Francisco.

The championship game of May 3d at Turner's Hall was followed by all present engaging in dancing to the tune of the jazzy strains of our Association's orchestra. The evening was well spent.

The committee trusts that players and spectators alike enjoyed this athletic tournament, and desires to thank all those who so ably assisted in making it a suc-

Those who wish to see the Drum Cup will oblige by calling on Harry Ridgway at San Rafael. R. Jenny.

ACTIVITIES OF THE "PACIFIC SERVICE" RIFLE CLUB

Since the last report of the activities of the Rifle Club we have completed the an-



"Pacific Service" Basketball Teams.

Reading left to right—Top row: Dukel, Citron, Berts, Gerber, Hansen, Derrick, Naismith, Smith, Gregor, Vote. Bottom row: Sirard, Akers, Andrade, Kraft, Manning, Sturdivant, Melville, Silverstein, Weller, Ennis, Trembath.

nual indoor shoot of the National Rifle Association. The N. R. A. national indoor matches are held in the spring of each year, and clubs from every part of the United States compete in them. The number of clubs competing in 1919 was one hundred and eighteen, including one club from the Hawaiian Islands. The annual match consists of ten targets, one being shot each week for ten consecutive weeks. The maximum possible score on each target is 200, giving a possible total of 2000 for the season.

During the past season prizes were awarded to the club which attained the highest score. Smaller prizes were offered to the ranking club of each State provided that at least five clubs were entered from that State. Unfortunately the "Pacific Service" Club does not qualify for either type of prize. In addition to the club prizes, bronze "ninety per cent" medals are awarded to all members who obtain a seasonal average of ninety per cent, regardless of the rank of their club. Four of these medals will be awarded to members of the "Pacific Service" Club for their work during the season of 1919.

The scores of our team are as follows:

andraca to the cre							0. 00	01 04			40 1011	
Match No.	1	2	3	4	5	6	7	8	9	10	Total	Average
Carpenter, S. E	191	187	194	194	187	186	190	186	190	191	1896	94.8 %
Dreyer, W		165	191	189	185	192	192	190	191	180	1843	92.1 %
Carson, Philip	169	172	171	191	180	184	191	188	189	191	1826	91.3 %
Lusk, C. H		168	181	184	172	182	190	184	193	188	1807	90.3 %
Hillebrand, P. H	137	141	140	148	145	156	159	182	179	163	1550	77.5 %
Phelps, C. A	135	145	137	140	146	132	127	106	133	114	1315	65.7 %
Stephens, W. O	168	168	179	178								
Hughes, V. R	177	172										
Team score	873	867	916	936	870	900	922	930	942	913	9060	90.69%

Note .- Team score is based on five highest targets in any one shoot.

The season for outdoor shooting is just beginning, and, as in the past, regular monthly shoots will be held at the State Rifle Range at Leona Heights, Oakland. The outdoor shoots are also conducted under the rules of the National Rifle Association, and qualification shoots are whenever ten members are present. The course consists of:

300 yards slow fire at 8-inch bullseye, 10 shots prone.

500 yards slow fire at 20-inch bullscye, 10 shots prone.

600 yards slow fire at 20-inch bullseye, 10 shots prone.

200 yards rapid fire at silhouette targets, 10 shots kneeling.
300 yards rapid fire at silhouette targets, 10

shots prone.

The maximum possible score is 250 and the qualification scores are:

For expert rifleman, 210 or over. For sharpshooter, 190 to 210. For marksman, 160 to 190.

The scores are turned in to the N. R. A. at the end of each year and bronze buttons are awarded to all members who qualify.

W. DREYER,

Secretary, "Pacific Service" Rifle Club.

News From Our Boys Now in the Service of the United States

[Gathered by the Honor Roll Committee.]

The following was received from Corporal Michael F. Longo under date of

April 2d from Le Mons, France:

"I am pleased to know that I am remembered by 'Pacific Service,' as it has been over a year since I have seen the magazine. I came to France as a replacement in June last year, and in the month of July I was placed in a tough fighting outfit. We started from the Marne to Vesle, but the armistice ended our career."

Corporal Longo further states that he is in the best of health and that his divi-

sion expects to sail homeward about the first of May. He desires to be remembered to his many friends in "Pacific Service."

Sergeant Crawford C. Hill, formerly of the Commercial Department, arrived May 9th with his division, the 364th Ambulance Corps. He is very happy at being reunited with his family, 50 per cent of which he had never seen before.

The Employees' Association is very fortunate in having received a German helmet as a souvenir from First Lieut. Merl W. Bremer, which has been placed on permanent exhibition at the

Employees' Headquarters at 445 Sutter Street. Lieutenant Bremer sent the following statement in regard to the helmet:

"History of same:—This was picked up by the writer on September 13, 1918, on famous Montsec. The day of the St. Mihiel drive, September 12, 1918, I was on reconnaissance work and so did not get time to pick up any souvenirs, but on my way back from work, September 13, 1918, I picked this up. It was lying near an American soldier from San Jose, Cal., whom I helped to bury. It was on the side of a hill and evidently must have been dropped in flight."

Mr. Ernest A. Hansen, who has been in

the Government service for the past year as sergeant in Radio Detachment No. 8, located at the time of discharge at Love Field, Dallas, Texas, has returned and is again in the company's service, connected with the General Construction Department, Line Division. Prior to and up to the time of the signing of the armistice, he was stationed at Pittsburgh, attending the Government Air School there for radio mechanics.

Mr. Leslie Neider, who has been in the Government service for the past year in

Company D, 89th Division, has recently returned from France and received his discharge. He returns to the company service in the Construction Department, Line Division. While in France he saw some real fighting at the front with the 89th Division.

Mr. John V. Spinetti, formerly with the Construction Department, Line Division, who has been for the past eighteen months in the Government service with the 15th Spruce Squadron, 2d Provisional Regiment, located at Vancouver, has been discharged from the army and returned to the company in his old capacity.



Paul Singleton, 101st Aero Squadron, A. E. F. (Formerly of San Jose District.)

Mr. Malcolm Hook, who was with the Electric Department prior to entering military service and who was connected with the 13th Military Police, Company A, Camp Lewis, has again associated himself with the company in the Line Construction Department.

Glenn Wilson, who was in the employ of the Pacific Gas and Electric Company in Redwood District before he went into the army, has been sent to the University of Manchester in England, where he will be given a three-months' instructive course in electrical engineering. Mr. Wilson does not know when he will be sent home, but hopes that it will be soon.

Pvt. Lloyd Morrill, formerly of the Accounting Department, Alameda County District, under date of March 2, 1919, in Holler, Germany, has written a very interesting letter. He entered the service on July 2, 1917, with Oakland's Own, Battery "E," 143d Field Artillery, and went into training at Arcadia, near Los Angeles. From there they were sent to Camp Kearny, remaining for one year, when a call came for replacements. He volunteered to leave his original organization and was sent to France as a Casual. Landing at Liver-

pool, England, they were sent to La Havre, France, and then assigned to the 7th Field Artillery, "B" Battery of the famous First Division which had just come out of the battle of Soissons. They were returned to the Ponte Musen front, which was a very quiet sector, where he remained about one month. Orders were then received to move to the St. Mihiel front, which was reached about September 1, 1918, when preparations were being made for a drive. It was on the 12th of September at 1 A. M. that the famous St. Mihiel drive started on a 40-mile front. He was relieved there and ordered to go to the Argonne with another drive. His regiment was in this drive for 42 days up to the time the armistice was signed and made a total advance of 30 miles. If the war had gone on they would have pushed the Hun back onto Belgian soil in that sector.

Soon after the signing of the armistice orders were given to move on into Germany as members of the so-called army of occupation. It was a long hike; took them nearly one month to reach their destination, a distance of nearly 200 miles. Finally they reached the city of Coblenz, and on the morning of December 13th they crossed the Rhine, the first American troops to do so. Holler is but a short distance from Coblenz, where they are still keeping a "Watch on the Rhine."

Now, there is something else on his mind beside whipping Germany into



A. P. Oliver, payal inspector, Ordnance, York, Pa. (Formerly of Collection Department, Sun Francisco Districk.)

submission and legal and moral rectitude. It is, as he puts it, "God's country, dear America," and he hopes to return in the near future.

Mr. Everett E. Hammond, who was an employee of the General Construction Department, Line Division, prior to our entering the war, has returned again to our ranks, filling his old duties with the company. While in the army he was with the 43d Aero Squadron, spending six months in England and six months in France.

Corporal R. F. Smith, formerly of the Redwood District, has returned from

France with his regiment and is now discharged from the service.

An interesting letter has been received by Mr. Britton from Captain W. B. Mel, of the Headquarters Army Service Corps, now at Bordeaux. Captain Mel says in part:

"Having in mind just what you suggested, namely, the seeing of a little more of France before returning, I applied for further service in the A. E. F., and the order detaching me came through just before my regiment embarked. It was not very easy to see my outfit embark and watch the ship slowly pull away from the docks, I can admit frankly.

"My assignment was with the Army Service Corps and after a leave of three all too short days in Paris, I was detailed as Assistant Base Representative of the Army Service Corps in this base. work is very much to my liking, involving as it does the inspection of our sixty organizations in this section and requiring traveling to most of the cities and interesting points in this part of France. My trips are both by auto and train, and I find it intensely interesting in spite of the discomforts of French trains. With an auto one gets away from beaten paths and into country fairly out of touch with railroad traffic; places where the little villages look as though they have not changed in aspect for a hundred years or more. This impression is strengthened by the fact that one

meets very little auto or horse traffic, only donkey and oxen-drawn carts. Autos and horses were nearly all commandeered for governmental use during the war and the few autos left in the hands of individuals do not circulate very much owing to the price of gasoline, which, I am told, is \$1.30 per gallon.

"This seems to be quite a place for the turpentine industry and some of the trees are slashed in from one to five places near the base, and the little earthenware cups are placed to catch the pitch. Another common sight along the highways from here to Biarritz are the cork trees. These trees often line the road and oc-

casionally are seen in small forests. They resemble our live oak except for the heavy cork bark on the main trunk.

"The last two weeks have been spent in the leave areas in the Pyrenees and on the ocean shore at Biarritz, the famous summer resort near Spain. The Pyrenees are all snow-covered at this time, and the melting snows supply water for numerous waterfalls. We passed several small hydro-electric developments and a few of the railroad lines are electrolized. In this part of France, the Midi, extensive hydro-electric development is planned, and when the war began the Midi railroads were preparing to convert their lines from steam to electric traction.

"Two weeks ago I saw Marcus Mensing in the embarkation camp. The prospect of immediate return to California didn't seem to make him down-hearted in the least."

Manager J. H. Pape of Berkeley some time ago received a letter from Harry Larson, formerly line foreman and now with Company "A," 316th Engineers. Since writing this letter Larson was shot through the hand in the battle of Argonne. The letter reads in part as follows:

"On arriving in France we found everything far behind the times as we see them. In the little town where we are billeted everybody goes to a public pool



T. S. Madden, 111th F. B, 40th Division, Battery A. E. F. (Formerly of Marysville District.)

to wash their clothes, kneeling down and using the stones surrounding the pool for a washboard. I don't think they ever heard of an electric light, and plow the field with oxen. The house and barn face the main street, all in one building. No men here between the ages of 18 and 50, but what people are here sure have big, kind hearts and after knowing them one would feel that war is the last thing that would ever enter their minds or disturb their peaceful community. principal industry is glove-The gloves are making. dyed and stamped out in Paris and forwarded to the little burgs for the people to finish. In one home

they sew the fancy work on the back, take them across the street and the next home sews them together, back across the street they sew on the thumb, and so on until the glove is finished and ready to send back to Paris, from where they are shipped to all parts of the world.

"Over here the French people believe, with America's great weight thrown into the war, that it won't be long before we have the Huns backed up against their own back door making their last stand. The indomitable courage of the American soldier renders the Hun's infantry useless, the absolutely accurate aim of the American aviator makes his artillery ineffective, the high moral standing of the American army makes his victory hopeless. That the ingenuity of the American high command will cause the German machine to totter and crash is inevitable, and we believe it has been truthfully said that we will be in Hell, Heaven or Hoboken by the first of the coming year. At any rate, you can depend upon us to do our best to bring this gigantic conflict to a successful close at the earliest opportunity, and after the final curtain is rolled down those of us who are left will have but one object in life, and that is to use every effort to see that war is forever abolished from the category of human crime."



Laying a Submarine Gas Main

By GEORGE KIRK, Superintendent Gas Distribution, Alameda County District.

To many of our readers, and, in fact, to many residents of the east bay district, it may be news that the canal separating Oakland and Alameda at Twenty-third Avenue, or Park Street, is artificial.

Twenty-five years ago the United States Government ordered an island made of the city of Alameda, and in order to supply Alameda with gas an 8-inch cast-iron main was laid across the proposed canal,

completely covered with inches concrete.

For twentyfive years this main has satisfactorily supplied all needs. But now the march of progress has again made history in "Pacific Service."

With the advent of Government Island.

ice to Alameda.

Skandia Pacific Oil Engine Co., lumber industries, and, in fact, all branches of commercial activities on the Tidal Canal, a few months ago Government engineers notified us that the channel at this point was to be dredged to a depth of 18 feet below low water to accommodate larger vessels to handle this trade. This decision naturally placed our "perfectly good" main supply right in the path of progress, so we found it necessary to

Shortly after receiving this notice, and under direction of Mr. George Kirk, superintendent of gas distribution in this district, plans were laid and estimates made to lay a new 8-inch hydraulic-screwed gas main from shore to shore; this time,

provide new means of supplying gas serv-

however, while water remained in the channel. Wrought-iron screw pipe was selected as it was easier to install and would be more satisfactory for high-pressure service. When all preparations were satisfactorily completed the actual laying of the main took place on Thursday, February 13th.

The plan was to couple the pipe together on one side of the shore and then

by means of a rope cable attached to donkey engine on the other side to pull the pipe across. A week before the pipe was submerged the American Dredging Company dredged a trench in the bed of t h e canal 30 feet below low water



Starting to pull the big gas main across the channel.

ceive the pipe. Piles were driven along the west line of the trench at frequent intervals so as to guide the pipe into the trench, otherwise the strong tide would pull the pipe out of place. A diver was then employed to examine the trench and he reported it ready to receive the

The whole line of 500 feet in length was screwed together on skids fitted on a greased slide in a vacant piece of property on the Oakland shore. At each joint a special sleeve was placed and filled with lead, taking about 100 pounds to the sleeve, to insure perfect tightness and double strength. The whole line was then tarred with a special pipe covering called "floatine" and wrapped with paper cover-



The main supported by pontoons while being towed across.

ing. This operation was repeated three times, ending with a coat of tar.

The donkey engine on the Alameda shore pulled the entire length of pipe across by cable, assisted by eight pontoons which floated over with the pipe. The pipe was then lowered, the diver again going down to see if everything was ready to backfill. It was found necessary to remove portions of the bank on each side of the channel to allow the pipe to slide into the bottom of the trench. This earth was removed by hydraulic pressure and the pipe sank into its berth. The trench was then filled in by the dredger, so that the main will rest about

12 feet below the final bottom level of the canal.

The main now lies in its permanent bed on the bottom of the Α 45-degree cast-iron canal. bend, lead joint, rests on the canal bottom at the Oakland shore. On the Alameda shore the 8-inch hydraulic pipe was bent to a 45-degree angle before pipe was pulled across. Forty-six feet of 8-inch pipe was added on to angle to bring above low water. This allowed men to work on Alameda shore end when pipe was lowered. From there a length of 8-inch wrought-iron pipe is extended up the bank above high water, where it ties into the terminus of the lines on shore. The removal of condensation in the submerged line was accomplished by a piece of 1-inch wrought-iron pipe extending down the interior of the shore ends to the bottom of the elbows. The tops of these risers are capped with stopcocks so as to facilitate blowing the line clear.

The big problem in laying this long pipe was to keep it perfectly straight, as any bending would tend to strain the joints and open up leaks. Again, the long length and its enormous weight made it

bulky to handle, especially across water with a strong current running. As the pipe was floated across the stream by supporting pontoons, the water was kept out of the inside of the pipe by the 45-degree ends being kept turned upward and capped. Upon completion of the line, tests showed it to be tight at 80 pounds air pressure.

The old cast-iron line in concrete is to be removed by the contractor who furnished the equipment for laying the new line. This will be accomplished by breaking it up with a steel piledriver, and then removing the pieces from the channel to clear the way for the Government dredger.



The main receiving finishing tee on the Oakland side.

The Financial Side of "Pacific Service"

The following section on the subject of "Operating Expenses and Taxes" is reprinted from the recently published annual report of the Company for the year 1918:

OPERATING EXPENSES AND TAXES

The influence of war conditions on operating costs was felt in a cumulative degree in 1918, the wages of labor and prices of materials and supplies of all kinds rising to unprecedented levels. This condition was at its maximum at the close of the year with no tangible indication of any abatement in the near future that would reduce costs in any substantial measure. The situation was rendered still more acute by an abnormal and State-wide shortage of water, necessitating the production of a large amount of electric energy at steam stations which, under normal conditions, would have been produced at smaller cost at hydroelectric plants. Coupled with extremely high prices for the oil used in these steam plants, this condition added substantially to operating expenses.

Taking all the circumstances into account, it is not surprising that the extraordinary increase in costs of more than \$2,000,000 in 1917 was followed by an additional increase of \$1,875,639 in 1918. The increased costs in these two years actually amounted to \$3,921,448 and absorbed practically every dollar of additional revenue derived from the greater volume of business in these two years and from the increased gas and electric rates in effect during the latter half of the year 1918. In the

meantime, \$6,390,889.99 of additional capital was invested in the business.

Excluding reserves for uncollectible accounts, casualties and depreciation, the cost of conducting the business in 1918 may be segregated as follows:

(1)	Oil used in gas manufacture and production of electricity by	
• /	Oil used in gas manufacture and production of electricity by steam	\$4,362,627 or 35% of total
(2)	Labor	4,241,512 or 33% of total
(3)	Taxes	1,782,939 or 14% of total
(4)	Current purchased	902,697 or 7% of total
(5)	Other Expenses—chiefly materials and supplies other than oil	1,404,554 or 11% of total
• ,	•	
	Total	\$12,694,329 or 100%

The following table presents in condensed form the trend of oil, labor and material costs representing substantially 79% of operating and maintenance expenses as shown in the above table, from July, 1914, the month immediately preceding the outbreak of the European war, to December, 1918, the month following the signing of the armistice. During this interval oil prices increased 129%, wages 32%, taxes 140% and materials and supplies 89%. The prices in December, 1918, clearly indicate that the era of high costs did not cease with the armistice.

	Oil		Operating Labor		Materials and Supplies	
	Price per Bbl. Purchased (System Average)	Cumulative Increase %	Average Wages Per Employee Per Month	Cumulative Increase	Index of Cost*	Cumulative Increase
July, 1914	\$0.70		\$90.16		\$45,414	1:2
July, 1915	.70		90.67	1% 2% 8% 24%	49,175	8% 43%
July, 1916	. 78	$^{11\%}_{63\%}$	91.76	2%	64,862	43%
July, 1917	1.14	63%	96.96	8%	78,981	74%
July, 1918	1.58	126%	112.07	24%	85,828	74% 89%
Dec., 1918	1.60	129%	119.07	32%	85,862	89%

^{*}The figures in this column show that certain materials and supplies costing \$45,414 in July, 1914, cost for like quantities of the same materials in July, 1916, \$64,862, in July, 1917, \$78,981 and so on until the maximum of \$85,862 was reached in December, 1918. These are the costs of the Company's average monthly quantity requirements of thirty-one kinds of materials most largely used in its business (excluding oil), as determined by actual purchases during three and one-half years.

The rapid upward trend of taxes, comprising 14% of expenses included in the foregoing table, and the constantly growing proportion of gross operating revenue and net operating income absorbed by taxes may be seen from the following table:

		Required to Pay Taxes		
Year	Amount of Taxes	Percentage of Gross Operating Income	Percentage of Net Operating Income (Before Deduct- ing Taxes)	
1914	\$ 743,047.25	4.39%	9.60%	
1915	849,444.53	4.58%	9.66%	
1916	972,565.17	5.22%	11.08%	
1917	1,253,239.40	6.33%	15.26%	
1918	1,782,939.31	7.89%	18.48%	
Increase 5 years	\$1,039,892.06 or 140%			

It will be observed that almost one-fifth of net operating income was required for taxes in 1918, or about double the proportion of net operating income absorbed by taxes in 1914. Increased taxation is too universal to require particular emphasis. It may be pointed out, however, that your Company is required to sell its products at regulated rates and is permitted to earn upon the fair value of its property a maximum rate of return only sufficient to attract the new capital required in the enlargement of facilities necessary to fulfill its duty of serving the public. While directly taxed for war purposes and also having shifted to it in the form of higher prices a proportion of the war taxes of other industries undoubtedly exceeding its direct taxes, it is not in the class of businesses that have profited from war activities, but quite the contrary.

STATEMENT OF CONSUMERS BY DEPARTMENTS AS OF APRIL 30TH

April 30th	Gas Department	Electric Department	Water Department	Steam Sales Department	Total
1907	106,795	45,535	5,311		157,641
1908	123,794	56,197	5,638		185,629
1909	131,409	63,889	5,875		201,173
1910	141,688	73,260	6,489		221,437
1911	155,637	90,450	7,009	6	253,102
1912	180,497	106,301	7,531	153	294,482
1913	197,666	120,384	7,481	239	325,770
1914	210,216	136,338	8,691	302	355,547
1915	222,936	155,759	9,144	353	388,192
1916		169,200	9,685	381	406,050
1917		184,267	12,041	400	431,811
1918		198,620	12,706	452	457,929
1919	258,275	213,758	12,810	464	485,307
Gain in 12 years	151,480	168,223	7,499	464	327,666

THE PUBLIC UTILITY INVESTMENT FIELD

"No class of securities is more widely distributed than the bonds and stocks of electric railway, gas and power and light, telephone and other public utility companies. The average holdings are small, and while very large amounts of utility securities are held by the insurance companies and savings banks, they are also distributed in the smallest denominations owing to a multitude of investors. More than \$4,500,000,000 are invested in electric plants; nearly \$5,000,000,000 in electric railways; \$3,500,000,000 in gas plants, \$1,500,000,000 in telegraphs and telephones and probably a half million more in equipment and supplies for these utilities in the hands of dealers—a total of \$15,000,000,000 of the people's savings devoted to the conservation of energy in the public service."—Investment Bankers' Association of America.

Pacific Service Magazine

PUBLISHED IN THE INTERESTS OF ALL EMPLOYEES OF THE PACIFIC GAS AND ELECTRIC COMPANY

JOHN A. BRITTON - - - EDITOR-IN-CHIEF FREDERICK S. MYRTLE - MANAGINO EDITOR A. F. HOCKENBEAMER - BUSINESS MANAGER Issued the middle of each month

Published by the Pacific Gas and Electric Company at 445 Sutter Street, San Francisco

The Pacific Gas and Electric Company desires to serve its patrons in the best possible manner. Any consumer not satisfied with his service will confer a favor upon the management by taking the matter up with the district office.

Vol. X

MAY, 1919

No. 12

EDITORIAL

In this post-war period, when the general trend is toward a readjustment of conditions in almost every walk of life, we are pleased to note a growing disposition on the part of the public press of the country to take a common-sense view of the public utility problem and to realize that upon the stability of the public utility depends, to a very large extent, the prosperity of the community in which it operates.

This gradual awakening, if so it may be called, is something that the up-to-date public utility will make the best use of. The up-to-date public utility will make use of it, not by complaint or protestation in aggravation of existing conditions, but by the one thing that is likely to appeal to the

public.

That one thing is SERVICE.

One of the strongest features of the recent gathering of electrical men at Coronado was the address of Mr. E. O. Edgerton, President of the California State Railroad Commission, at the Friday

night banquet.

Mr. Edgerton, to use his own words, had left his duties as Railroad Commissioner to travel down to Coronado to size up the crowd. He thought the time and trouble worth while, for he wanted to make up his mind as to what the men he saw there were thinking and what their outlook was. The results of his observations he gave to a large audience in the dining room of the hotel, and this he did in forthright fashion.

The keynote of his address was the future of the electrical industry, and

what the privately owned companies must do in order to retain their hold upon the public service. Mr. Edgerton complimented the convention highly upon the set of resolutions it had adopted at the closing session, resolutions which outlined its policy for the ensuing twelvemonth, and he was emphatically earnest in his declaration that if those resolutions should be lived up to in letter and spirit the privately owned public utilities of California need have no fear for the future. On the other hand, should the resolutions prove to be mere empty words, then, in the Commissioner's judgment, it was a case of "Look out!" It was entirely a question of the attitude of the public toward the utilities. To quote Mr. Edgerton:

"The question of municipal ownership as compared with private ownership will not be determined upon any discussion upon a doctrinaire opinion whether public ownership is or is not to be, but upon the conclusion of the people as to whether the private agency now operating is successfully meeting their needs. If the judgment is adverse, there is only one alternative and that is public ownership. In my judgment, the issue is not 'Shall we have public ownership or private ownership at the moment?' but 'Will private agency successfully meet the needs of the public?"

The public utility problem, therefore, resolved itself into one of service. Up to the present time public service with regard to the electrical industry in Cali-fornia had been entrusted to the privately owned public utilities, and it would depend upon the service these utilities gave the public in the future, depend also upon their ability to convince the people they were giving that service, whether the public service would be allowed to remain in their hands. It was not, the Commissioner thought, the judgment of the public utilities themselves as to their service that would count, but the judgment of the people. The utilities themselves might feel perfectly satisfied of the perfection of their service, but if the public failed to agree with them their days were numbered. The public had become tired of promises and pronouncements; it now looked to performances.

Mr. Edgerton dwelt with particular emphasis upon the utterance of the convention that the prime duty was service. He asked those before him if they realized the full import of those words and were prepared to carry them out in the management of their business to the full

extent of their ability.

"Mind, gentlemen," said Mr. Edgerton, "that you mean what you say; that you mean that there is a new order of things and that the old order is changed; that you do not mean that these words are mere mouthings or mere nothings. Are you prepared, gentlemen, are you prepared, managers and executives, lieutenants and privates all through the ranks of public utilities, to mean what you say, that service is first? Are you prepared first to convince yourselves that you are sincere in that statement? If you are, there is no obstacle in your path to convince the people. But if you are not convinced in that statement your job to convince the people is entirely hopeless and all the advertising in the world, all the explanations you may make, all the excuses you may offer, will count for nothing. If you are not prepared with that conviction in your own soul you cannot go before the people with the proposition that their welfare comes first."

Mr. Edgerton thought the battle for public opinion would have to be won with these weapons: First, service; second, patience; third, honest explanation. There was, he thought, a general dissatisfaction with public ownership throughout the land, to the extent that were the question put to the public, "Shall we own the railroads and telephones?" the proposition of national ownership would be overwhelmingly defeated. At the same time, it must be remembered that when the railroads and telephones were turned back to private ownership private ownership would be put to the most severe test that it had ever been confronted with in this country. It would be impossible, he thought, to kill the public ownership idea; the idea would always stand as a

menace to private inefficiency.

All this was pretty plain speaking, but the entire assemblage took the Commissioner's remarks with excellent good will; not only that, the warning, if so it might be called, those men were receiving had the effect of making them clench their fists and rise in their places and show by attitude and by voice a determination to prove that any intimation of foreboding which Mr. Edgerton might appear to convey would speedily be proven groundless by the public utility record for the ensuing twelvemonth. And it would appear that Mr. Edgerton caught the spirit that was in the air when he closed with these words:

"The public utility business in California, as I have observed it, has attracted the brightest men in the State. There is not an industry in California that is manned and captained by better people than the public utility industry is today in the State of California. If you fail it will not be because of lack of ability, but because of other things, and as I have met each of you and as I know public utility men in California, while I am not prepared to say you are going to win I am almost prepared to bet on you."

Mr. Edgerton's talk has attracted a good deal of attention. It did not, however, furnish the only occasion for a discussion of this subject of Service at the Coronado convention. As intimated above, Service may be said to have been the keynote of the convention. All the prominent utility leaders there sounded it in one form or other. President Kahn, Mr. Ballard, Mr. Kennedy, Mr. Britton, each in his turn presented the prevailing idea to his hearers.

We tell this to our readers merely to show that so far as the Pacific Coast is concerned the electrical men out here are thoroughly alive to the situation and to the necessity for their doing their bit, so to speak, in helping to clear it in the most practical and effective manner.

We regret very much to announce the departure from our ranks of Mr. M. L. Neely, manager of our Fresno District, whose resignation took effect the first of the month.

Mr. Neely came to "Pacific Service" six vears ago last November from Ohio, where he had charge of the properties now under control of the United Gas Improvement Company. He is a thorough gas man, and during the period of his service with the company he proved himself to be the right man in the right place. He made friends wherever he went and his cheery countenance was always welcomed at gatherings of the Pacific Coast Gas Association. He leaves us to attend to personal matters which must from now on take up the whole of his time. He has mining interests in San Bernardino County which he will take full charge of and his headquarters will be in Los Angeles.

In leaving the company Mr. Neely assures us one and all that the memory of his association with "Pacific Service" will ever be a most pleasant one, and that the latchstring on his door is always out for

the boys.

Tidings From Territorial Districts

Alameda County District

жилиний маний на при на при на при на при на при на при на при на при на при на при на при на при на при на пр

During the Fourth Liberty Loan drive Station "C," Oakland, went over the top on the first canvass. When others began to double up they were not to be outdone and also doubled up. One of the boys suggested buying a dinner for his shift in recognition of their prompt patriotic spirit. The matter was dropped and forgotten until, one day, and without any advance publicity, each man on the shift was invited, without any knowledge why or who was going to appear, to a local downtown restaurant for dinner on April 28th, and if he had a wife to bring her. Needless to say they were all on time.

One asked the other "Why are we here and what's the occasion? Who's all coming?" It was surely mysterious. It finally developed that C. C. Rogers was the host and, of course, some one thought maybe he was going to announce it. Mr. Rogers was the man who some months previous had suggested giving the boys a dinner and made good in royal fashion. Everyone had a very pleasant time and all are still waiting for Rogers to make the announcement.

Edna Ottman has carried off the honors for repartee. A tired mother came into the office with a fretting child. She put the little one on a settee while she went up to pay her bill. The child kept up a whine all in the same monotonous

tone. Edna was busy, but like everyone else was fully aware of the distressing whine. Someone asked in her hearing "What key is that?" Edna replied "A minor." Someone else said "She's sharp." Someone else said "Sounds flat," to which an "aw" responded, whereupon the latter said "I tried to B flat."

A. E. Ferguson is back to work, having served as recruiting clerk and in the school of gas defense.

Joe Bruno served as corporal overseas with the 27th Division and also is now back to his duties at Richmond.

Uncle Johnnie Clements, who served in the Civil War, says submarines are up and aeroplanes are down, which are stock quotations to make us joyous.

The Ad Masque at the big Oakland Civic Auditorium is an annual event. This year "Victory" was the keynote. The large arena was crowded; some 10,000 in attendance. Different business firms entered representation of their business. There were some 2000 people in costumes both elaborate and grotesque. "Pacific Service" had ten young ladies from the Oakland office attired in white, even to the shoes, each carrying a green silk parasol, a sash of the same color and a big sweet smile for everyone. The simplicity immediately won prestige. They



Winsome girls from the Oakland office who represented "Pacific Service" at the Ad Masque.

represented by insignia the various large cities supplied by "Pacific Service." The newspapers commented: "There were representatives as follows, who will spend the week-end in Oakland: Misses Mary Leal, San Jose; Edna Ottman, Stockton; Edyth Case, Sacramento; Christine Morris, Auburn; Gertrude Brown, Napa; Myra Cary, Fresno; Margaret Adamson, Chico; Mabel Willis, Marysville; Fiamma Tripp, San Francisco; Pearl Sturm, Oakland.

R. L. Bertolacci, formerly operator at substation "G," has returned from the service. He was commissioned ensign and stationed at the Bethlehem shipyards. He made many trial trips on destroyers built for our Government.

C. E. Knott, operator at station "F," has also returned from the service. He was quartered at Camp Lewis in the Engineering Division, thence went to the Science and Research Division of the Signal Corps at University of Nebraska, thence sailed for France in June, 1918.

Bed is bunk and meals are mess in the Army—so the boys explain.

Dan Massoni of the Street Main Department has returned to his position after serving in four of the big engagements in France. He also experienced the hospital with a case of pneumonia. Three days without practically any food, excepting what was taken from the German dead, and sleeping in mud caused the severe strain preceding his illness.

Mr. John H. Pape of Berkeley recently returned from a trip to Mexico where he was looking over various interests. He was received and entertained by Mexican officials and thereby was accorded courtesies through diplomatic relations between our two countries. He was very much impressed with the beauty of the country, its luxuriant tropical growth and the wonderful opportunities. possibilities on every hand, many of which he admitted were very tempting. Asked as to the political situation, Mr. Pape said that he was given much information through the officials he met but much of it was confidential to the interests he was representing. However, he conceded that harmony would soon be restored between the various factions.

Mr. Pape was accompanied by a personal bodyguard which assured his safe return.

IN MEMORIAM

Robert James Green of the Street Main Department died April 22d, after a brief illness. He had been in the employ of "Pacific Service" for twenty-one years, making many friends. He leaves a wife and seven children, of whom three sons were in the U. S. service. The many friends extend their deepest sympathy.

Yolo District

A large acreage is being prepared for planting to rice and beans at the Conaway Ranch east of Woodland. The task of grading, ditching and leveling hundreds of acres of land for the planting of rice and beans began during the latter part of March, and many men are employed. "Pacific Service" will supply approximately 1000 h. p., 825 of which is being added this year to operate the irrigation plants for this ranch. The Yolo County Board of Supervisors has just approved the formation of a reclamation district that will include all of the Conaway Ranch property, as well as some of the adjoining ranches.

The Globe Mills of Woodland have shipped 20,000 sacks of rice ordered by the Belgian Relief Committee. There were 275,000 bags purchased from the California market, and the order was apportioned out amongst the rice mills of the valley.

The River Farms Company received about 7300 pear and prune trees during March to add to its orchard acreage.

Through application filed with the State Water Commission, in San Francisco, plans for a big irrigation project that will get its water from the north fork of Cache Creek have been made public. P. H. Laugenour, P. N. Ashley and a few others are the ones most interested in the project.

Fred Shaffer, secretary of the Board of Trade, will shortly inaugurate a campaign for more homes in Woodland—enough to be built, at least, to supply the demand and aid in upbuilding the city.

J. W. Coons.

Marysville District

The several counties of this district again came to the front and oversubscribed their quotas to the Victory Loan.

With a capacity for turning out forty thousand feet of lumber a day the new mill just completed at Oak Valley by the Oak Valley Lumber Company will commence operations on June 1st, according to the manager, W. F. Mandry of this city. This mill has been constructed in the heart of the forest district and is one of the big industry assets to Yuba County.

The Marysville Dredging Company, operating at Marigold, lost one of its boats by fire, Dredge No. 4. Lumber from this will be used on Colgate flume.

This dredge was operated by "Pacific

Service."

At a meeting held here to determine what roads this section of the county wants to be constructed in Biggs and vicinity, Engineer Green suggested that a macadam rather than a concrete road be built in this section because such a road type will permit the wear and tear of heavy hauling.

H. S. Brink offered a suggestion that Biggs organize a separate highway district, decide the mileage of roads wanted and bond the district for road construc-

tion.

For the first time since the inauguration of irrigation in this section a large acreage of wheat is being wet with water from the canal. Many small fields have been irrigated in past seasons, but this is the first time irrigation has been practiced on the large grain ranches.

F. A. Onstott, who has a large ranch near Gridley, is irrigating 288 acres of wheat. It is believed that the application of water means the saving of the crop as the ground is so dry that without irrigation there would be very little matured to harvest. Many of the smaller fields of grain have or will be irrigated soon.

By the standing vote of four to one the landowners of the proposed Honcut Irrigation District have voted to accept the committee report on boundaries and to proceed with organization of the district.

Under the terms of the committee report the Honcut Irrigation District will comprise approximately 26,300 acres of

land and will not include any land lying west of the Oroville-Marysville river road. Cornering at near the Union School house the district will follow the 140-foot contour line in a southeasterly direction toward Honcut, will pass Honcut and enter Yuba County, where approximately 14,000 acres of the Yuba Land Company tract will be included. South of the Yuba Land Company tract the line runs westerly to the Oroville-Marysville road which becomes the western boundary of the proposed district.

Rosenberg Brothers are working a large crew on the new rice mill in Colusa and from present indications this will be ready to handle this year's rice crop.

E. C. Johnson.

Vallejo District

Vallejo and Mare Island went "over the top" in the Victory Loan.

And still the building boom continues in this city, as will be noted by the following data secured by our popular salesman, H. B. Martell:

The Y. M. C. A. expects to break ground about June 1st on the corner of Sonoma and Capital Streets for its \$60,000 building.

Before the year is over the Elks' Club will have started a four-story building on the corner of Sonoma and Georgia Streets

The Salvation Army is preparing extensive improvements on the old site secured from the Elks' Club.

The Bell Amusement Company will erect a beautiful theatre on what was formerly the McGill property, at the corner of Main and Virginia Streets.

Harry Handley, the clothier, has announced that he will erect a four-story reinforced concrete building costing

\$65,000.

Martell expects to have these buildings, as well as others, in line for gas heating with the Rector System. (More power to him!)

The reports are that the big bridge which connects Vallejo and Mare Island will be finished by June 1st and a big celebration is planned for the event.

The announcement by Captain Beach, commandant at Mare Island, that there are now employed at the yard 8700 employees with a payroll of \$40,000 a day

and bright prospects ahead for doubling the force at the Island in a short time, will show how some of the money pours into Vallejo.

If the building boom continues it seems quite certain that some one of the force here will be able to locate a house for our accountant, Mr. Meredith. He says commuting gets monotonous. We'll land him yet, for we want him in our club.

The "Pacific Service" Club is looking forward to some good times this summer and expects to invite a bunch from out of town at a big doings that is contemplated.

Mare Island's new cafeteria, costing about \$50,000, has been completed and is ready to serve 2000 persons at one sitting. L. C. Pomber.

Marin District

Mr. W. S. Warner, cashier in the San Rafael office, has left for Los Angeles where he will act as executor of the estate of his deceased aunt. The employees of the Marin District tendered him a farewell party on the evening of April 28th.

H. G. RIDGWAY.

Solano District

THE MAN WHO STOLE THE RED HOT STOVE OPERATING AROUND DIXON

Mr. E. D. Dudley, one of Solano District's irrigating consumers, has a 20-h. p. electric irrigating plant located directly on the State Highway two and one-half miles north of Dixon. About a month ago he looked into his pumphouse and noticed that his starting compensator had disappeared. He purchased starter and asked us to mount it for him. When the work was completed the lever was thrown to starting position, but the motor, which was at the bottom of a 16foot pit, did not start. One of the men went below to see what the trouble was and called back to the man above, "Shouldn't there be a motor down here?" The man above replied "Sure." "Well. there isn't," came back from the depths.

Sure enough this 900-lb. motor had van-

ished to parts unknown.

C. E. SEDGWICK.

San Francisco District

The Galland Mercantile Laundry, Eighth and Folsom Streets, has just entered into

new contract, taking from the Pacific Gas and Electric Company the larger part of its electrical energy used.

The Riddle Sheet Metal Works, 1048 Folsom Street, and the Main Street Welding Company, 111 Main Street, have each installed a 20-kilowatt welder. It seems that electric welding is becoming more popular each day.

Dunham, Carrigan & Hayden, north-west corner of Alameda and Kansas Streets, are increasing their installation by 30 horsepower in the new four-story structure, which is in addition to their present location.

The genial gentleman of the San Francisco District who has the habit of telling funny stories and looking over the top of his glasses, went fishing the other day. He has returned and, according to his statement, the fish are of the usual length, i. e., the same size of fish that he catches every season, with the largest giving a terrific pull and getting away. One guess will be allowed the reader as to who this individual is.

F. S. Gray. Head Offices, San Francisco

At the San Francisco Engineers' Club, on the 12th of April, a few friends of Mr. E. A. Weymouth gathered around a table to bid him adieu from the ranks of Mr. Weymouth re-"Pacific Service." signed from the company to enter the employ of the Remar Company as sales manager.

Mr. Weymouth entered "Pacific Service" in 1911, in the Commercial Department. For a number of months he was Acting Manager in the Marysville District, during which time Mr. J. E. Poingdestre was away on leave of absence. Later Mr. Weymouth was appointed Assistant Manager of the Sacramento District, in which position he remained four years, and was later transferred to the General Manager's office, where he has been for the past two years.

Mr. Weymouth took an active part in the Pacific Service Employees' Association, having been chairman for one year of the Educational Committee, and during the past year chairman of the Welfare Committee, which work he has carried on successfully. By his devotion to duty and his sterling character he made many friends in the company and will be

missed.

"Pacific Service" Roll of Honor

Employees Who Have Entered the Service of the United States

REVISED LIST AS OF MAY 15th, 1919 Total Number -

GENERAL OFFICES—SAN FRANCISCO

xAkerhielm, Fred xAllen, Randall Francis Baugh, Sergt. Clive Everett Behrena, William Henry Bohnert, Lieut. Arthur M. Bremer, Lieut. Merl W. Bucknell, Clarence E. Bucknell, Clarence E.
Butler, Joseph, Jr.
SBuzzell, Sergt, Jesse Wilbert
Canfield, Lieut. Colonel George H.
Cass, Cheater R.
Crowley, Albert J.
de Fremery, Lieut. Leon F.
SDreyer, Lieut. Walter
Dunne, Lieut. Edward A.
Dunton, Harold C.
Dyer, Fred E.
Estcourt, Vivian
Forsland, Raymond A.
Fronmuller, Theo. Carlton
Gray, E. L.
*Died of pner

Hammond, Everett E.
Hansen, Ernest Axel
Hauck, Lieut. Fred B.
xHill, Sergt. Crawford C.
Hornberger, Cecil Louis
xJones, Leon B.
Keesling, Lieut. Hector
Kiene, Joseph
Koester, Lieut. Frederick A.
Lewis, Fred Charles
Lindblad, Lieut. Wm. N.
Lindstrom, W. J.
McDermott, Louis Wm.
McDonald, Hayward C.
Mel, Capt. Washington B.
Mensing, M. B.
Monroe, Capt. Robert A.
xMurgatroyd, Robert
xMurphy, Lieut. Elmo Neil
Nordling, Wm. Hammond, Everett E.

Osborn, Lieut. Norris W. Parker Charles G. Regan, Arthur Rossiter, Sidney Benjamin. Rossiter, Sidney Benjamin .
Rubenstein, Frank Sam
Schuster, Lieut. John C.
Shaw, S. B.
Smith, Cyrus Newell
Spinetti, John V.
Stevenson, Lieut. Richard H.
xSultan, Lieut. Walter D.
Terhell, Sergt. Jacques
xThomas, Lieut. G. M.
XTrowbridge Cant. Alfred L. XTrowns, Lieut. G. M.
XTrowbridge, Capt. Alfred L.
Trudrung, Harry
Watson, John
Wilkins, R.
*Wilhelm, Clarence
Williams, Lieut. Leroy G.
Wright, Lieut. Ernest M.

*Died of pneumonia while on active duty in France, January 23d, 1918. †Died of pneumonia in St. Paul, Minn.. October 14th, 1918. ‡Died of pneumonia in San Francisco, December 27th, 1918.

ALAMEDA COUNTY DISTRICT

Abernethy, Sergt. Harry
Anderaon, Corpl. Harold M.
Barr, John Milton
Barrett. George
Bates, Byron M.
xBelford, William
Bennetts, Herman V.
xBertolacci, Ensign R. R.
xBraemer, Lee
xBruno, Joseph
Call, Bert
xChandler, Sergt. Arthur E.
xClarkson, Fuller
Clayton, Oscar Fitzgerald
Cooper, Walter Haines
Cormack, Douglas Leslie
xCowell, Charles Merritt
Gurrier, J.
Deuschle, Fred W
Duceo, Daniel
xDupuoy, Max
Erickson, William
Fairchilds, F. C.
xFerguson, Allen E.
Forbes, Robert E.
Forbes, Stewart
Frederickson, Stewart
Gay, Earl D. Gay, Earl D.

xMcKenzie, Malcolm M. Mills, Leon A. Morrill, Corpl. Lloyd M. Mosher, James Nelson Nelson, George A. Nelson, Norcal

CHICO DISTRICT

xCurtis Ray E.

Andrews, Corpl. Crist C. Broyles, George R. *Hale, Corpl. Bert J. Hanson, Albert

Bell, Herbert Olin Dunn, Harry Dunn, Raymond Carro xDusenbery, Sergt. H. S. Hinds, Perry Mare

Allen, Robert Grady Altpeter, Chas. E.
Beaumont. Floyd Burton
Boyd, William Thomas
Compton, John A. xReturned to Civil Life.

COLGATE DISTRICT

Hunt, Lieut. Edward C.
Johnson, Corpl. Oliver Ray
Meagher, Francis Joseph
Randall, Corpl. Earl Roscoe
*Killed in action in France, Oct. 5th, 1918.

CONTRA COSTA DISTRICT

xKelly, A. T. Knight, Lieut. Remi Chabot Little, Howard Manchester, P. H. Matheron, Frank

DE SABLA DISTRICT

Kasa, Leo M. Kegg, Jesse Cecil Marlowe, Thomas A. McGuffin, Alfred L. Oswald, James
Parsons, James
Perkins, Erwin S.
Pershing, Orton Lewis
Pilcovich, Vincent
Price, Chalmers G.
Proto, Charles
xPullen, Corpl. R. A.
xRowe, Sergt. John M.
Sabel, Albert
Sanborn, Wilfred M.
Sandoval, Ensign Horace Earl
Shuman, D. L.
Sibbett, J. E., Jr.
Silvestro, Paul
xSkoglund, Elmer
Smith, Stuart N.
xSoutherland, Lieut. Frederick J.
Sprott, Bryan
Stephens, Alden Raymond
Thompson, Clark C.
xVeirs, Harry D., Jr.
Wagner, Ralph Otto
Waltham, Ralph Owen
xWeeks, Anson Button, Jr.
Whitehurst, Leslie
Youngstrom, A. B. Oswald, James

Reardon, Sergt. Frank P. Royat, Wm. Boston xSmith, Joseph William

Truitt, James O.

Mellerup, Fred H. Mess, Lieut. Charles T. Netherton, Raymond Wayre Royater, Sergt. Joseph A. Teachenor, J. L.

Smyth, Leslie Hall Stone, George L. Stone, Miles A. Wells, Shelley E.

xMeservey, Charles A. Pease, Howard

x McMilin, Robert S. x Nuner, Glover J. Stewart, W. S. Wettstein, Henry Zuccone, Sylvia

Newland, Fred Walton Patterson, Sergt. A. Earl

Patterson, Sergt. A. Low Ryan, R. Stearns, O. J. Stearns, Ray Storm, Sergt. Walter E. Thunberg, Frank W. Thunberg, Gus L.

Newhart, A. P. Thayer, Sergt. E. H.

McKenzie, Grover Clarence Myers, Earl Clifford Pappa, Corpl. Julius Payne, Harold Hector Sheldon, W. Frederick Schleck, Sergt. C. J. Shearer, Ensign William Young, Joseph P.

Snow, Wilbur Roland

Taylor, Albert P. Taylor, Lieut. Cary P.

Sutcliffe, Lieut. Harold T

Peers, G. A. xRaynard, Duncan

Knaynard, Duncan Sampson, L. E. Sebben, J. E. Smith, Corpl. R. F. Strofeld, George Thane, Alexander Uhlenberg, Louis H. Yost, Charles Z.

Roach, Martin L. xRoss, Chas. Archie Ross, Harold Lee Sanford, Walter W. Sarton, Adolph Shaban, Adolph

Sheehan, Parker J.
Smith, Joseph Lee
Smith, Myron M.
xStiewer, Winlock W.
*Suggett, Archie Dean
xWilliams, Lester J.

Fairchilds, John H.

x Britton, Lieut. Emmet N. Hager, Charles W. Johnson, Samuel T

Carlton, Ben F. Drendell, Paul Ferrari, Corpl. Clyde Getchel, Clyde James, Ed. Judd, R. H.

Alstrom, Frank A.
Brown, Ira A.
Burkleo, Dan
Butterworth, William Z.
xCorlew, Harland Hall
xDevlin, John A., Jr.
Dickson, John
Downing, Robert W.

Dallerup, Chas. xDeLisle, Leon Emerald, Maurice A.

Adams, James Albert Averhill, Sergt. H. W. *Borkey, Peter Vanest, Jr. Brady, Edward Burns, Thomas F. Conger, L. N. Coyne, J. J. Duane, Charles

Gash, Lieut. Frank Taylor

Beloud, Leon C. Earl, George

Beveridge, James

Kent. James Cody

Anderson, W. O. xBoulware, Wm. F. Bryggman, Emil W. Budalich, Oialy A. Caussou, Jean xCasey, T. Chase, Corpl. H. A Clausen, J. J. Cullen, John P.

Anderson, John L. Anderson, Wm. Elmer Baker, Joseph Baker, Joseph
xBaldwin, Capt. George B.
xBaugh, R. W.
Belluomini, Primo J.
Bigelow, Ernest C.
xBrady, Theodore
Brewater, G. V.
Brown, Jay G.
Bryson, Vincent G.

xBeeler, Joseph J. xBlack, Marion xDerr, Harvey Dyer, Corpl. John B.

Barriere, Ernest

Arens, Frank
Barker, Cecil B.
Beach, Nelson James
x Bowers, Sergt Harold S.
Francouer, Raymond J. xGewirtz, A.

xReturned to Civil Life.

DRUM DISTRICT

xLohse, Lieut. Marcel P xMichael, John L.

ELECTRA DISTRICT

Kimball, Oliver M. Leonard, Arthur L. Leonard, Ed. C. x Martin, Jack H. x McFadden, Edw. A. x McKenzie, Ralph

FRESNO DISTRICT

xGomes, Carl Holmes, Stanley E. Howard, Frank P. Krog, Corpl. John P. Long, Percy E. Maze, Norman E. Nair, Harold

MARIN DISTRICT

Johanson, Clarence M. Langford, Sergt. Clifford xMills, Russell

MARYSVILLE DISTRICT

De Rosa, J. De Rosa, J.
Esenman, Paul G.
Gavin, Harold J.
Hefner, Chester H.
Hefner, Joseph Philip
Holdridge, H. Earl
Holmgren, J. E. Hubbard, Sergt. H. W.
Johnston, Corpl. Dwight D.
Johnson, Frank
Koenig, Sergt. George F.
Lubmann, John Henry
Madden, Thomas
McCabe, Alexander

*Killed in action on or about November 9th, 1918.

NAPA DISTRICT

Mayfield, James M. Osborne, Lieut. Butler J.

NEVADA DISTRICT

Snell, Verne C. Richards, James

PETALUMA DISTRICT

Jones, Claude O.

PLACER DISTRICT

Leary, Jerry

REDWOOD DISTRICT

Deloy, H.
xFulton, Lieut. L. J.
Haaker, Frank
Haines, G. V.
xHarcourt, J. R.
*Hiestand, C. R.
Hocking, Thomas J.
Hoffman, Andrew P.

Jennings, Edward J.
Johnson, Corpl. Hjalmar
Kirkpatrick, G. B.
Laughlin, Burton E.
Likely, Lieut. R. D.
Likely, H. E.
Lundquist, Leonard L.
Mengel, Henry

*Killed in action in France, Oct. 1st, 1918.

SACRAMENTO DISTRICT

SACRAME
SACRAME
SACRAME
Cameron, John
Coyle, William Doyle
Crandall, Geo. H.
Daigle, John M.
Dick, Silas S.
France, Fred Rhodes
Hochderffer, W. E.
Hornbeck, John Chas.
Johnson, William Max
Klein, Earl Everett

Logan, Raymond M.
Mathews, Maurice L.
Melby, John
Miller, J. E.
Mullen, Ira J.
Newington, David
O'Connor, Edward T.
Olsen, Albert

Raymond, Harold A. x Richeson, Merle C. x Riggles, R. F.

Koch, Carl xLocke, Harry M. McKenzie, Alfred

*Killed in action. (Reported in Casualty List published Dec. 2d, 1918.) SACRAMENTO SUPPLY DISTRICT

xJackson, Claude E. Jones, Verne H. xKinz, William J.

SAN FRANCISCO DISTRICT AUDITING AND ACCOUNTING DEPARTMENT

Carew, Corpl. Clement J.

BOOKKEEPING DEPARTMENT

Gibney, Walter xHaiden, Walter Inteman, R. Jacobsen, Earl D. Keating, Arthur Edward Gilhuly, Aloysius M.

Lindsey, Elroy M. xMurphy, Thomas J. xSuters, F. X. Wilson, Herbert E. xWilson, Reginald St. Clair

SAN FRANCISCO DISTRICT-Concluded.

COLLECTION DEPARTMENT O'Connor, Charles A. xOliver, Adrian Pierce

COMMERCIAL DEPARTMENT

Collins, Geo. Washington xFitzgerald, Paul

Anderson, Lieut. Berrien P. Browning, George E. Conlisk, Lieut. Raimon F. xFitzpatrick, Lieut. Wm. E.

xBarker, Capt. Guy A. Beatie, Gerald Biehl, Lieut. P. F. Richl, Lieut. P. F.
xBrady, George B.
xBurnett, Walter
xButler, Sergt. Harry E.
Campbell. Sergt. M. F
Clark, Lyle G.
xCook, Frank L.
xCook, Joseph
Crompton, Walter James
Daley, Lieut. Robert
Davidson, David
Dodge, Chas. P.
xDonovan, Patrick
Drew, Harold
xDurand, Milton J.
Eichbaum, Sergt. C. W., Ju-

Addleman, Thomas L.
Allen, Fred H.
Altland, Comer A.
xAnderson, Sergt. Lyle Z.

Eichbaum, Sergt. C. W., Jr.

Ellis, Clarence L.

Garthorne, Sergt. George E. Horsey, Lieut. Joseph H. Leary, James E.

ELECTRICAL DEPARTMENT

Estea, Sergt. Melville N. xFogalsang, W. J. Fowler, E. H. XGardiner, Harold Anson Gaston, Lieut. J. B. XGerber, Harold XGilbert, Paul H. Glasson, Pearse

Madden, Joseph J.
Martin, William T.
McDougall, Chas. A.
McKinnon, J. P.
Merkelbach, Corpl. Julius
xMeyers, Alfred Henry
Ogilvie, Clarence H.
xOstrowski, Ray
xParker, A. J.
Peterson, Ernest Andrew
xPeterson, Ernest Andrew
xPeterson, Ernest F.
xPippey, William J.
Pringle, Sergt. Alec.
Rasmussen, Nels Goldman
Robinson, Gordon
Roche, Wilfred Patrick
Roseberry, Edwin Bruce
Scannell, Florence
Schultz, Kurt William
XSeifkes, Sergt. Lane F.
Shields, Lieut. Garrison F. Keilbert, Paul H.
Glasson, Pearce
Griffin, John W.
xHagar, Capt. George H.
xHart, Lieut. Grover C.
Haughy, Corpl. Edward G.
xHenion, Floyd
Hildebrand, Ernest
xHonnef, Henry
xHull, Sergt. Ray L.
xHunnel, Bryan
Jackson, George
Jacobs, Samuel Leonard
Kennedy, Donald S.
Kobylinski, Walter
Locka, Herman J., Jr.

Locks, Herman J., Jr.

*Killed in an accident in France, September 17th, 1918. †Killed in action September 29th, 1918.

GAS DISTRIBUTION DEPARTMENT

Gowans, Robert B. xHansen, John T. Johnson, Sergt. Albert xKemnitzer, Mellwood Murphy, Edward R.

Pape, William Frank Raspadori, Joseph Carl x Richter, Herbert Rutledge, Arthur B. xSchwartz, Joseph

Died of pneumonia in Camp Lewis, Wash., October 4th, 1918.

x Ambler, J. R. Black, John x Doherty, James Hallahan, Maurice

*Barry, Gail W. Buchella, Frank xClose, Wm. Lansing Doherty, John xGlennon, Joseph D.

Hanley, Leo J.

GAS MANUFACTURING DEPARTMENT Jones, Lieut. Dwight W. xLynch, John Joseph xMcCallum, E. A.

RECORDS DEPARTMENT

Hughes, Percy Anthony SAN FRANCISCO SUPPLY DISTRICT

Abercrombe, Corpl. Donald xCorbett, Allen Andresen, Corp. Carl. Blair, Walter B. Clark, Richard xEqui, John Clark, William Lang, R. T.

xMcCarthy, John xMcNab, Corpl. Hugh D. Merlinjones, Clarence Newman, Ray J.

xFaight, Corpl. Forrest W. Flint, Lieut. Arthur P.

Andresen, Corp. Carl. Blair, Walter B. xClark, Richard Clark, William

Argall, Marsden Stratton xBalley, Sidney F. Bigger, Clyde A. Billard, Wm. F. xBranch, Ira H. Brewer, Lyman E. xBrown, Henry Edward Burns, Leo Burns, Raymond J. xCaldwell, Lieut. Edward F.

Hanson, Percy B. Harris, Eli Raymond

Anderson, Sergt. Frederick E. xMix, Francis L.

Bischoff, O. E. Boots, Benjamin

SAN JOAQUIN DISTRICT Hunt, Lieut. Herbert Tevis xMartin, Lieut. David G. McIsaac, Dan Olsen, Melvin L.

SAN JOSE DISTRICT

xGandello, Lorenzo Carroll, Louis Chaboya, Wilbur Clarence Charles, Lieut. Eugene H. Coyle, Dan K. Erbentraut, Edwin Otis Faulkner, Chas. C. xFiman, Edward F. Frederickson, J. C. Frier, George S.

STRICT
Hale, Lieut. C. St. John
Hall, Sergt. Evans E.
Harkness, T. J.
Jensen, Elmer D.
Johnson, Capt. Carl B.
Kiely, Wm. P. Jr.
MacGregor, Owen L.
Maxwell, Merritte M.
McFarland, Julian
Menzel, Sergt. Robert J.

Riesen, Alvin
Rowe, Lieut. Ernest W.
Roy, Harvey Leon
Singleton, Paul
Sprung, Lieut. Stanley W.
Stojanovich, Tony
Suess, Walter R.
Tarp. James P.
Wright, Lieut. Thomas A.

Shea, Cornelius Thomas Sheehan, Peter Burnett

xTracy, Lieut. Grover S. Van Zandt, Wynant xZimmerman, Lieut. Elmer

xSiggins, N. J. xSouthwood, Emerson C. Spandau, Capt. R. D. Stohler, Adolph

Sweeney Michael
Szczepanski, Edgar M.
*Thompson, Capt. A. R.
xThompson, Lieut. William
xTurner, John McBurney
Upton, Albert M.
Valach, J. P.
xVargas, Virgil H.
tVarney, Capt. K. Roberts
Wagner, Hilmor A.
xWalker, R. J.
xWalsh, Thomas W.
xWaters, Wm.
Winter, William J.
Wolfe, Harold S.
Wright, Howard C.

Wright, Howard C.

Shea, Raymond Dennis Simon, Joseph M. xSullivan, Stephen Joseph Taylor, Monroe Louis Walthers, Frank

xMcSharry, Edward Stephen xMulligan, Thomas J. O'Hare, John Thomas

xPerassa, Louis xPolson, Edward Queirolo, Chas. Quigley, James L.

Riley, Norman Sidney Young, C. Cuyler

McDonald, Wm. John

xSundberg, Emil Sweeney Michael

SANTA ROSA DISTRICT Ross. Mervyn F.

SOLANO DISTRICT

Moore, George R.

VALLEJO DISTRICT xArgabrite, Lieut. Walter M.

YOLO DISTRICT Grandquist, K.

AUXILIARY ROLL OF HONOR

RED CROSS Curtis, Miss Letitia A. (Head Office) Y. M. C. A. Traxler, Jesse E. (Alameda Co. District)

xReturned to Civil Life.

xShort, Ralph C.

Morgan, Mervin E.

Howard, Everett J.

Westinghouse Electric Ranges



What They Cost and Save

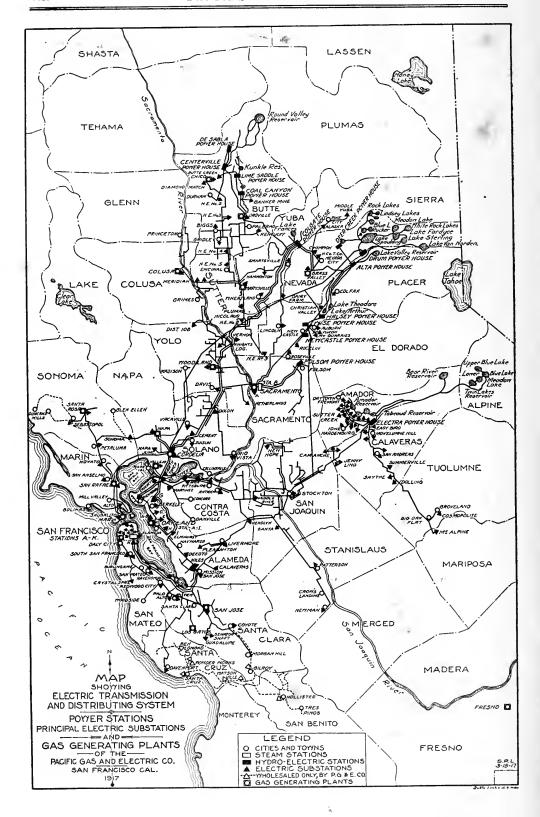
Results show that the average family uses 75 to 100 Kilowatt hours of electricity a month in a Westinghouse Electric Range. This expense is hardly worth considering for, aside from the convenience, the saving in food more than pays for the electricity.

For instance, a six-pound roast cooked in the oven of a coal or wood stove shrinks about 1½ pounds, in a Westinghouse Electric Range about ½ pound. You can buy less and have more to eat. Besides, with the automatic features, watching is unnecessary, as burning of foods is impossible.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

EAST PITTSBURGH, PA.

SAN FRANCISCO OFFICE, 1 MONTGOMERY STREET



Pacific Gas and Electric Company Furnishes "PACIFIC SERVICE"

TO OVER 470,000 CONSUMERS OF

GAS • ELECTRICITY • WATER • STREET RAILWAY

Serving 1,823,108 Total Population, in Thirty-two of California's Counties

	DIRECTLY		INDIRECTLY		TOTAL	
	No.	Population	No.	POPULATION	No.	Population
Electricity	128 51 11	1,210,830 1,219,690 57,302 76,000	48 2 8	132,825 8,600 19,300	176 53 19	1,343,655 1,228,292 76,600 76,000

CITIES AND TOWNS SERVED BY COMPANY:

			CITIES AND TO	11110	DRVED BI COM			
	Place Pop	ulation	Place Pop	ulation	Place Po	nulation	Place Poi	oulation
	Alameda	30.000	El Verano	400	MokelumneHill	300	² San Ouentin	2,500
		2,300	Emeryville	3,000	*Morgan Hill	750	¹San Rafael	6,000
	Albany	700		250	Mountain View	2,500	Santa Clara	6,000
	Alvarado	550	Esparto	250	Mt. Eden	210	Santa Cruz	13,600
	Alviso	1.100	Fairfield	1,000	Napa	6,500	Santa Rosa	11.000
	- Amador City			300	4-8Nevada City	2,900	Saratoga	300
	Angel Island	2.000	Fair Oaks	300	Newark	505	Sausalito	3,000
	Antioch		Felton	2,000	Newcastle	950	*Sebastopol	1.950
	Aptos	300 250	Folsom	2,000	Newman	1,200	Shellville	200
	Atherton		Forestville	48.867	Niles	1,000	Sheridan	250
	4-4Auburn	2,800	¹Fresno	2.900	Novato	400	Smartsville	300
	Barber	500	Gilroy	900	2Oakland	225.000	Soquel	400
	Belmont	375	Glen Ellen	5.200	Oakley	200	Sonoma	1,290
	Belvedere	550	*- Grass Valley	1,800	Occidental	600	South San	-,
	Benicia	2,400	⁴Gridley	350	Oroville	5.000	Francisco	3,750
	Ben Lomond	800	Grimes	250	Pacheco	250	3-7Stanford Uni-	0,.00
	Berkeley	65,000	Groveland	780	³-¹Palo Alto	6,000	versity	2,600
	*Biggs	500	Guerneville	500	Paradise	500	-Stockton	42,000
	Bolinas	200	Hammonton	4.000	Patterson	500	Suisun	800
	Broderick	600	Hayward	950	Penn Grove	300	Sunol	340
	Burlingame	4,000	Hillsborough	2,500	Penryn	250	Sunnyvale	1,650
	Campbell	700	*Hollister	1.000	Perkins	250	Sutter City	250
	*Capitola	275	•-*Ione	800	Petaluma	7.500	- Sutter Creek	1.300
	Cement	1,000	Irvington	2.100	Piedmont	3,500	Tiburon	350
	Centerville	850	- Jackson	500	Pike City	200	Tres Pinos	300
	Chico	15,000	*Kentfield		Pinole	1.800	Vacaville	1.250
	*Colfax	500	Kenwood	200	Pittsburg	6.000	3-6Vallejo	15.500
	*Colma	1,800	Knights Land-	400	Pleasanton	1.500	Vineburg	200
	*Colusa	2,000	ing	2.000	Port Costa	1.000	Walnut Creek .	500
	Concord	850	*Larkspur		Redwood City.	4,200	Warm Springs.	200
	Cordelia	300	1-1Lincoln	1,500	*- Redwood City.	16,500	*Watsonville	6.000
	Corte Madera.	350	Live Oak	300	Rio Vista	1.000	Wheatland	500
	² -Cotati	200	Livermore	2,500	Rio Vista	1,000	Winters	1.200
	Coyote	200	Lomita Park	450		300	Woodland	5,000
	Crockett	3,000	Loomis	450	*Rodeo	4.200	Woodside	225
	Crow's Landing	300	Los Altos	500		900	Yolo	350
	Daly City	5,500	Los Gatos	3,000	*Ross *Sacramento	76,000	¹Yuba City	1,750
ŀ	Danville	400	Madison	250		75,000	· I uba City	1,750
	Davenport	300	Mare Island	500	San Andreas	3,000	-	
	Davis	1,700	Martinez	3,500	San Anselmo	1.500	Total Cities	
	Decoto	300	Marysville	6,000	San Bruno	580.000	and Townsl	.422.522
	Dixon	1,200	Mayfield	1,100	San Francisco	45,000		,,
	Drytown	225	Menlo Park	1,100	San Jose	550	Add Suburban	
	'Duncan's Mills	200	Meridian	225	San Juan	5.000	Population	400,586
	Durham	300	Millbrae	300	San Leandro	400		
	4- Dutch Flat	750	Mills	350	San Lorenzo	200	-	
	Eldridge	500	Mill Valley	3,200	San Martin	6.000	Total Popula-	
	2-4El Cerrito	1,200	Milpitas	350	San Mateo	500	tion Served1	.823.108
}	Elmira	350	Mission San Jose	500	San Pablo	300	tion betvea	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Unmarked—Electricity only.
—Gas only.
—Gas and Electricity.

←Gas, Electricity and Water. ←Gas, Elect. and St. Railways. ←Electricity and Water. Electricity supplied through other companies.

-Gas supplied through other companies.

Water supplied through other companies.

"PACIFIC SERVICE" FACTS:

Number of Electric Consumers	213,758
Number of Gas Consumers	258,275
Number of Water Consumers	12,810
Number of Steam Consumers	464
Total number of consumers	

Operates 13 Hydro-Electric Power Plants. Operates 3 Steam-Electric Power Plants. Operates 18 Gas Plants.



Forward—into the wonderful future!

IMAGINE an America with no light to switch on, no telephone at its elbow, no street car at the corner!

American vision, backed by invested capital, has brought these everyday miracles into your life.

Their development, halted by war, again has right of way.

America will now leap forward. The public as bond-holders will again finance our public utilities, those great quickeners of American spirit.

A public utility is a public necessity. The soundness of your public utility bond is permanently rooted in expanding public need.

render unusual service to investors generally, and to bond buyers in particular.

country.

The National City Company

National City Bank Building, New York

BONDS SHORT TERM NOTES ACCEPTANCES

You will find a National City

Company Correspondent Office in 47 of the leading cities of the

Each of these offices is equipped to

SAN FRANCISCO 424 California Street

PASADENA 319 Citizens Savings Bank Bldg. LOS ANGELES 507 South Spring Street

SAN DIEGO 402 Union Building SEATTLE Hoge Building

PORTLAND
Railway Exchange Building

When writing, please mention Pacific Service Magazine



